A Consideration
of
Some Geographical Factors
affecting change in
African Population in Uganda
1900 - 1950

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INTRODUCTION

The task of the geographer is to "see things together"[i], to take the complicated environment at any particular moment and to unravel its tangled threads until the component factors and the final synthesis are seen as part of an ordered pattern. This interpretation of environment is not accomplished by recognition of a dominant factor but by appreciation of the significant interaction of the basic material, the resources of the physical earth and the intentions and capabilities of mankind. The pattern revealed, although ordered, is not static, but dynamic; it is a living entity subject to change. In an appreciation of the contribution made to geographical thought by Vidal de la Blache, de Martonne writes:-[ii] "I think no one has tried, to the same degree, to look at the present phenomena of human geography as mere stages of a long evolution." This conception of essential continuity in time as in space has become the

i. It is interesting that this phrase is used in two quite different studies. In a general consideration:- in the Conclusion (page 163) of the Spirit and Purpose Of Geography by S. W. Wooldridge and W. Gordon East (1951) and in a detailed study, in the introduction to Problems of Land Settlement in Tanganyika Territory. by C. Gillman South African Geographical Journal. 1938.

ii. Preface to Principles of Human Geography - English translation. 1926. page.v.

illumination and the anchor of modern geographical thought.[i]

Seen in this light, the pattern of present land use is an indication of the resources of any area and a revelation of the part which man has played in the evolution of the present 'face' of the region. The record of man's increasingly constructive use of his habitat lies in the evolution and dispersal of cultures. The fundamental achievments attained in fixed agriculture and the domestication of animals have permitted dense populations to be supported in areas formerly dependent on extensive nomadic pastoralism.

In the course of man's occupation of the earth his accumulated experience brought increased knowledge of regional environments. Contacts between cultures evolved in neighbouring regions gave stimulus to inventions and the rise of new techniques. The pre-requisites of material progress thus are, adequate physical resources, a vigorous population and contact between peoples and cultures. In consequence, the favoured areas of middle latitudes in Eurasia became centres of the development and of the dispersal of major cultural advances, in contrast with regions, such as inter-tropical Africa, where isolation together with the poverty of a tropical environment apparently imposed a limitation on the adequacy of man's use of his habitat. Gourou[ii] makes the point that

i. See Max Sorre. Conclusions Générale de les Fondements de Géographie Humaine. Volume II.2 page.437.

ii. Pierre Gourou. The Tropical World. translated Laborde. (1952) page.141.

the essential difference in production and population density between the tropical areas of Asia and those of Africa rests, on the one hand, on the accessibility of Asia to the main stream of technical advance and, on the other, to the long continued isolation of the Dark Continent.

If this theory is accepted it follows that the recent introduction of western techniques into Africa will result in a profound change in land use and an increase in permissible densities of population and further that a study of the changes being effected in Africa will expose the possibilities and opportunities of the tropical environment and will reveal the intricate pattern of the co-ordination of its various components.

The tropical environments offer a challenge to modern geographers in the realm of comparative regional analyses, in which cultural differences appear supreme; in ecological studies, in which interactions appear to differ from those found in temperate areas and also in the field of the surveys of resources which are the basis of planning, for such surveys demand a full realisation of the composite nature of the environment and an appreciation of the effect of changes in the whole when one element is altered. This challenge has at least been recognised. Gillman[i] contends that in East Africa man still has a chance to inscribe his will on the land, but he goes on to plead that the will should be purified and refined by the results of knowledge.

i. C. Gillman. Problems of Land Settlement in Tanganyika Territory. South African Geographical Journal. 1938.

In a recent study Harrison Church[i] draws attention to the interest taken by British geographers in the field of colonial geography but laments the fact that they are so little employed. Stamp,[ii] in summarising his views on increased world food production makes this statement:- "In the meantime let us approach the problems of the tropics with due humility; ... the geographer's special field of survey and analysis has here a vital contribution to make." Lastly, in the conclusion to his excellent survey of tropical conditions Pierre Gourou[iii] maintains that geography can render "a better understanding of the exact nature of man's relation to his surroundings." No better justification exists for the technique of geographical synthesis.

Attempts at analysis of tropical environments have been focussed on land utilisation and related population distributions[iv] which together are an index of the land resources and of man's necessity. George uses this claim as a starting point for his study of world population when he writes in his introduction:[v] "les processus spécifiques

i. R. J. Harrison Church. Modern Colonisation. 1951.page.152.

ii. L. Dudley Stamp. Our Under Developed World. 1952.page.180.

iii. Pierre Gourou. The Tropical World. translated Laborde. 1952. page.152.

iv. For example, F. Dixey. Distribution of Population in Nyasaland. Geographical Review. Volume 18.
C. Gillman. A Population Map of Tanganyika Territory Geographical Review. 1936. S. J. K. Baker. Distribution of Native Population over East Africa. Africa 1937

v. Pierre George. Introduction a l'étude géographique de la population du monde. Paris. 1951. page.10.

des systèmes économiques et sociaux sont inséperables des variations et des tendances du nombre d'hommes." and thus suggests population change is a vital factor in landscape evolution which serves to indicate the dynamic balance between man and the physical resources of his environment.

This then is the background to the present study which is based on observations made during a tour of service in Uganda in which the writer became increasingly aware of the essential unity of the total environment and of the overwhelming importance of the major problem which faces the country viz, that of matching increasing population with increasing production within the framework of a tropical environment and with the techniques available. Accepting the fact that the examination of population change might prove the focal point of the study of a tropical environment the study was first entitled "Population change, density and distribution in Uganda 1900 - 1950"[1] and was planned as a careful analysis of the changes which have been effected during the last fifty years. It was hoped that a survey, restricted in time and space, would reveal the potentialities and problems of a region of tropical environment in which techniques of both temperate and tropical areas were in use and that the development of environmental resources would be

1. The original survey and the present one are concerned only with African population. This is not to discount the importance of the European and Asian populations but their presence poses new questions which could best be dealt with in a separate study.

reflected in population change.

As work proceeded on the statistical material, however, the uncertainty of many of the figures became only too evident. The 1911 census was a mere enumeration, taken over the period of a month and confined to the fully administered districts of the Protectorate; unadministered and partially administered districts being lumped together under an omnibus estimate. The method of enumeration in 1921 was never revealed but in 1931 population was counted by mulukas, the smallest administrative unit, whose boundaries and areas were totally unknown. Despite these careful efforts no full report on the 1931 census was published, apparently because the figures were received with scepticism as they disagreed with the estimate made by adding to the 1921 figures the recorded balance of births over deaths. These facts are important as a revelation of the current attitude to estimates of population. Implicit faith appeared to be placed in the early counts, the recorded births and deaths were accepted as final figures and no account was taken of migration. If total figures were inaccurate, calculation made on a basis of more than one total, (for example, the calculation of birth and death rates per thousand of the population), gained in inaccuracy with every manipulation. Again, during the long period 1931 - 1948 in which there was no official census the estimates of population published in the annual Blue Books were based on the 1931 census figures to which were added district by district the balance between recorded births and deaths; migration was still ignored though every annual report bore evidence of its increasing

importance. If there was no remedy for this state of affairs at least there was recognition of it. In 1943 the Director of Medical Services, who was responsible for the collection of vital statistics, made the following observation:- "Calculations in the above (vital statistics) connection are still based on the census figures of 1931. No count of the population has been made since; omissions and irregularities in the submission of returns from some of the remoter districts discount the accuracy of the figures, as in previous years. No records are as yet kept of African immigration and emigration."[i] Only with the 1948 Census Report[ii] were figures produced which could claim real accuracy. Even here there is an important omission for Bunyoro district is recorded[iii] with a single figure taken from the Sample Census as the General Census forms for Bunyoro had been lost in transit; such are the risks attendant on population enumeration in East Africa. The publication of preliminary reports of the census evoked an immediate response. The following is the considered opinion of the Director of Medical Services:- "The birth and death rates published in past Annual Reports are now known to have been based on populations which were not estimated accurately, as was shown by the 1948 Census results; while it has been found that transfers of population from one district to another have not been taken into account."[iv]

i. Medical Department. Annual Report. 1943.

ii. African Population of Uganda Territory. Geographical and Tribal Studies. East African Statistical Department. 1950.

iii. Ibid. page.47.

iv. Medical Department. Annual Report. 1949.

Evidence of discrepancies was not difficult to discover. Population estimates for the period 1916 - 1920 are given as follows:[i]

March 1916	2,883,382		
March 1917	2,950,504	increase of	67,282
March 1918	3,357,080	increase of	406,576
March 1919	3,313,908	decrease of	43,172
March 1920	3,057,075	decrease of	256,833

The most careful searching among relevant reports failed to produce any explanation either for the great increase of 406,576 in the year 1917 - 1918 or, even allowing for the high death rates from famine and disease, for the decrease of 256,833 in the year 1919 - 1920. If there had been any remaining doubt as to the possibility of attempting a statistical survey it was banished with the publication of Volume II of Kuczynski's Demographic Survey of the British Colonial Empire.[ii] Source material for population studies of Uganda is so limited that it was not surprising to find that most, if not all, of the inaccuracies catalogued above had been duplicated in this publication. Kuczynski presents his argument with such painstaking clarity that reference is made to the Uganda section[iii] as a complete authority on the inadequacy and inaccuracy of population statistics. Statistics, therefore, appeared a doubtful basis for a population study.

Area study posed as many problems as did estimated

i. Colonial Office List. 1916; 1917; 1918. Colonial Reports Annual. Uganda. 1918 - 1919; 1919 - 1920.

ii. R. R. Kuczynski. Demographic Survey of the British Colonial Empire. Volume II. 1948.

iii. Ibid. pages, 230 - 324.

population numbers. The boundaries of the Protectorate itself have varied considerably, the chief alterations being as follows:-

1902 Transfer of the Eastern Province to the East African Protectorate. (later the Colony and Protectorate of Kenya).

1910 Anglo-German-Belgian Boundary Convention placed the Kigezi District under Uganda Administration.

1914 Adjustment of Sudan-Uganda boundary transferring Gondokoro and Nimule Districts to the Sudan and West Nile to Uganda.

1926 Rudolph Province transferred to Kenya.

These major changes had to be allowed for, especially when population estimates were made for the whole Protectorate, as was the habit generally in the period before 1920, and unless some estimate could be made of the population of the district under transfer Protectorate figures were a doubtful basis for comparison with those of later periods. A crippling difficulty arises when figures are computed on the basis of districts, whose size and composition are changed, very often without adequate record, while Provincial figures must be scrutinised very carefully, to decide the current composition of the Province. The smallest feasible unit of population calculation is the 'county' or saza and as these divisions were made the basis of the 1948 census it was hoped to map densities in these units. A request for areal figures for these divisions brought the following comment from the Director

of Surveys:- "it should be noted that County Boundaries in Uganda are subject to amendment from time to time and in many cases boundaries appearing on the map have not been accurately surveyed but have been inserted from sketches supplied by District Commissioners." [i]

A record is given of these negative results because the preliminary investigations, search for and extraction of figures, statistical calculation and checking of reports involved a great deal of time and labour before conclusive results were obtained but these proved without doubt the futility of attempting a statistical study of population in Uganda in the period before 1948.

It is clear that inaccuracy or total lack of figures and the absence of reliable information as to areas cannot be regarded as a satisfactory basis for a statistical survey of population change and this first project was therefore abandoned.

This conclusion indicated that the prevalent ignorance of the tropical areas of Africa may arise, at least partly, from the absence of reliable material in any particular field which could form the basis of study. Acceptance of this theory envisages stagnation in the province of tropical geography until such time as evidence becomes adequate, particularly as regards population change. But this is to deny the evidence that is available, in the

i. Official letter to the writer dated 19 June 1952.

record of change in environment in the last fifty years and in the concrete evidence of the existing environment which is the result of that change. Re-assessment of the function of population as an element of environment served to emphasise that, regarding environment as a totality, population becomes an integral part of the landscape or, in other words, is accepted as a geographical factor involved in the constantly changing environment, exerting influence on and being influenced by the whole, of which it forms a part. This is not to maintain that population distribution is influenced only by the characteristics of the physical environment for that would be to deny man the power to influence his habitat, temporarily or permanently. If the concept of totality is valid a study of the changing environment is a more proper approach to tropical geography for an analysis of change will reveal not only the properties of the various component factors but the significance of their combinations. This principle of concentration on environment, of seeing all things together is the basis of the present study, which is concerned with the changes in landscape in Uganda over the last fifty years.

It will be recognised that this approach maintains an essential unity of treatment comparable with the unity of the subject, for the constituent elements which combine in the observable phenomena can only be seen in perspective in their relationships with each other. The survey thus becomes an attempt to recognise certain relationships which are all-important within a tropical area recently

subjected to the guiding control of an extra-tropical civilisation; such recognition should add to the store of material on tropical geography.

It remained to be seen if suitable material was available for the study in its new form. There exists a great body of evidence concerning events and conditions in the Protectorate in the last half century which consists mainly of annual reports both of the Administration and of the technical departments supplemented by special reports on matters of great current interest. Not only are all aspects of development covered but in most cases there are cross checks as to the reliability of statements and to the significance of various trends. Even the population figures, accepted as part of the whole and not by themselves can be relied on as sound general evidence, particularly in the later years (1931 - 1948). Even Kuczynski, quick though he is to condemn the detailed figures, particularly in the early years, accepts the general changes for the intercensal periods.[1] The handling and mapping of population figures has thus been confined to broad district divisions up till 1931 and only after this date have county calculations been used. The maps are intended to be consulted in relation to the text for the two are part of a whole and neither is intended to stand by itself.

Within the framework of the change in total environment regarded broadly as 'development', it has been

1. R. R. Kuczynski. Demographic Survey of the British Colonial Empire. Volume II, 1948. page.239.

possible to treat of the various elements which mainly affect man's utilisation of the environment and to come eventually to a reasoned appreciation of population change, its causes and effects and thus to apprehend the pattern of geographical integration.

In laying the foundations of modern geography Vidal de la Blache discussed man's increasing use of the land in the following terms:[1] "for each stage of development there is a correspondingly fresh grasp of possibilities or appropriation of natural resources. It is by the power of invention that man, to-day as formerly, is still continuing to make for himself a larger place in the sun." But this place may be bought with a price: a price which is not always a monetary one. Thoughtless exploitation of resources in this generation may lead to economic disaster in the next, unless the fundamentals of the physical resources are studied and the effects of their development understood. While early modern geographers sought a breadth of view that would embrace all historical process those of this generation have had placed in their hands the task of focussing attention on the land as the actual medium of interaction and not on man as a mere partner in the process. Landscape is more than landform, vegetation and man and his works; the whole is greater than the sum of its parts; it is the living, perceptible entity whose spirit of regional personality is revealed in its form. This then is the province of study most

i. Vidal de la Blache. Principles of Human Geography. 1926. page.110.

proper to the geographer for in this medium he can see and handle the observable phenomena and, having seen all things together can claim to be not only a seer but an interpreter whose revelations are based on knowledge and understanding.

It is not claimed that this study is the final word on the subject of population change in Uganda; it is as the title suggests a 'consideration', an attempt in the light of available knowledge to "approach with humility" the problems of the interactions of all factors of the Uganda environment, to recognise the particular relationships established between the these factors and to present a balanced survey of fifty years of development, a development whose driving force has been the contact within this tropical area of two vastly dissimilar cultures.

A C K N O W L E D G E M E N T S

No work can be accomplished without initial inspiration, the gathering of material and finally, the reduction of that material to an ordered form. At each of these stages it has been my good fortune to have received particularly valuable advice and guidance.

The inspiration of this work springs from the land and people of East Africa and particularly of Uganda. To all who have "smelled the smell" of the great expanses of Africa the land cannot become a lifeless memory but continues to exert a remorseless fascination which is an impelling force not to be denied, a compulsion to continued interest and work. Material was mainly of two kinds: observation of the living landscape and the historical evidence stored in archives. The field-work for the study was undertaken during a tour of service as an officer of the Colonial Administration in Uganda 1945 - 1948 and my thanks are due to the Government of Uganda and to its officers who, often unwittingly, supplied much of the background material. I am indebted to the Carnegie Trust for a financial grant to enable me to undertake library work in Oxford and in London, to the staff of the Colonial Office Library (Reference and Research Section) and to Professor Kenneth Baker of Makerere whose steady encouragement and faith in the approach were particularly valuable. And to the late Professor Alan Ogilvie who acted as my official supervisor, no tribute could be too great. His

understanding interest in and deep concern for the affairs of Africa, his keen appreciation of the part which geographers could play in the presentation and solution of its problems, his enthusiasm and yet his stern but constructive criticism were invaluable to me and leave me with a debt I can never repay.

Notes on Maps and Statistics

Maps.

In order to preserve uniformity and allow easy comparison the bulk of the maps have been drawn on a base taken from the 1:1,000,000 map of Uganda produced by the Director of Surveys in 1950. The administrative divisions are taken from this map.

Scale

All maps have been reduced to 1:2,000,000.

Presentation

The loose leaf binding of the maps is designed to allow easy extraction and frequent comparison of the various maps.

Calculations of Population Densities

Protectorate, Provincial and District areas were supplied by the Director of Surveys. County areas in all cases were calculated by the use of a planimeter. Boundary changes have been allowed for where possible; reference is made in the text where this has led to difficulties.

Statistics

Population figures are presented in Appendix II. There is some small discrepancy between county, district and Protectorate figures owing to a few natives being 'unallocated' to any small administrative unit. These

discrepancies have been ignored because of the generally low level of statistical accuracy and the scale of the maps in which small inaccuracies must be accepted: this in no way invalidates the accuracy of general distributions and trends.

Chapters II. and V.

As indicated, the main theme of the study is development, which falls into three main periods: 1900-1920; 1920-1939; 1939-1950; divisions which do not correspond with intercensal periods. For the sake of clarity Chapter V. has been divided into periods 1900-1911; 1911-1931; 1931-1950; and a conclusion added to the chapter to bring population change into line with general development.

C O N T E N T S

T A B L E S

CHAPTER I.

ENVIRONMENT

Part I.

Physical Resources

Though classed together with Kenya, Tanganyika and Zanzibar as one of the group of East African territories, the Protectorate of Uganda, by reason of its geographical position might more properly be regarded as Central African, situated as it is in equatorial latitudes on the main continental plateau surface extending west and north from the shores of Lake Victoria and having West African affinities in respect of both flora and fauna. The predominating plateau nature of the country and the proximity of the great water expanse of Lake Victoria together have influenced the potential resources of the country, whose development is reflected in the numerical strength and in the grouping of population at any particular period.

On the other hand, while the physical features of the country are in the main continental, the guiding influence over the last fifty years has been extra-continental and, as the United Kingdom has dominated the development of the country, so its own inland location has emphasised the necessity for adequate communication with the commercial world. The 841 miles of railway system which now link Mombasa, the nearest seaport, with the commercial capital, Kampala, is the symbol both of the necessity for an outlet for Uganda's trade and of the

economic links which bind the East African territories together.[i]

The boundaries of the country as finally established are, of course, arbitary,[ii] as in many of the African dependencies, whose frontiers are the result more of the triumphs of diplomats and strategists concerned with defining advantageous spheres of influence rather than of a considered delimitation of an area with specific regional characteristics. These arbitary frontiers have come to have a permanent and cultural significance but the lack of physical homogeneity or of a clear-cut centralising feature complicates the task of describing the essentials of the physical environment.

The outstanding physical feature of the Protectorate is the extent of the centrally situated plateau surfaces, capped by residual hills, downwarped in places to form large areas of shallow lakes and swamps, flanked to the west and east by discontinuous highland masses of considerable height and pronounced slope, bounded on the south by the great water mass of Lake Victoria and in the north offering no clean cut barrier but stepping down gradually to the lower plateau of the South Sudan. Thus, in essence, topography rather than geology dominates the environment.

Within the Protectorate the divisions most significant

i. Map 1.

ii. Worthington. Geography and the development of Africa. Geographical Journal. September 1950.

for human occupancy are those of vegetation. Regions with a cover of forest or elephant grass, under which soils of good structure will develop are indicative of adequate and well distributed rainfall. In the 'inland zone' of the country, beyond the influence of the mountains and the lake, rainfall decreases in amount and increases in unreliability of both quantity and distribution, the dry season becomes more pronounced and in general soils are lighter and more quickly exhausted by cultivation.

These are the environmental influences of major importance to development; their significance persists throughout the period, for the resources available for primary production depend largely on the factors of topography, climate, soil and resulting vegetation. Every other facet of the integration of geographical factors which constitutes environment plays some part in the changes effected in the period under review and an appreciation of the possibilities of development rests on a more detailed survey of the physical resources which were available in 1900.

Placed within its tropical African setting the Protectorate comprises a section of plateau land approximately 4,000' high which is fractured at the eastern and western edges by sections of the two great Rift Valleys. The Western is represented by the trough in which lie Lake Edward, Lake Albert and the Albert Nile and the Eastern branch by the line of the Turkana escarpment in

the north east, on the Kenya - Karamoja border.[i]

These border Rift areas contain, or are associated with, the striking features of the fringing highlands which, though representative of only a small part of the land area of the Protectorate, exert a powerful influence on regional climates and ways of life and incidentally provide the scene of much of the mining activity in the Protectorate as the up-thrusting of the Basement Complex rocks has aided mineral investigation. In these border areas there is widespread evidence of the vulcanicity partly responsible for the mountain masses which rise with great suddenness from the main plateau level. In the east, Mounts Elgon (14,178'), Debasien (10,050') and Moroto (9,700') are all composed of Tertiary volcanics and in the west the Mufumbira and Toro volcanoes are of the same age.[ii] The great crystalline block of Ruwenzori, sixty miles long and rising to 16,794' in Margherita Peak was also up-thrust in Tertiary times when great displacements occurred along the Rift faults.[iii]

The remainder of the country consists of large areas of smooth surfaces, slightly tilted from the upland plateau of Ankole at 4,500' - 5,000' towards the north west where the uplands bordering the Western Rift lie at approximately 3,000' and the Nile valley itself at 2,000'. The great expanses of almost featureless plateau land,

i. Map 5.
ii. Map 6. Geology. Map 4. Drainage
iii. Summary of Progress. Geological Survey. Uganda. 1919 - 1929.

mainly underlain by the old, worn, crystalline rocks of the Basement Complex have been reduced to their present state by a series of long periods of peneplanation.[i] This planing down and subsequent uplift has resulted in four recognisable surfaces: at 6,000', 4,200'-4,500', 4,000' and the lowest at approximately 3,700', the present swamp level. In the absence of detailed topographic maps it has been impossible to map these surfaces, but in Map 5 the predominating plateau nature of the country is expressed by the delimitation of three major land levels.

1. 3,000' - 3,500' - representing the down-warped Kioga Basin and the north western areas.
2. 3,500' - 4,000' - the central area.
3. 4,000' - 4,500' - the Mubende, Toro and Ankole uplands.

Above the main surface of these peneplains rise remnants of the upper surfaces represented by numerous smooth-sloped, flat-topped hills. These hills, which are rounded and closely set in the central, Buganda, area where the Basement Complex predominates, become more widely spaced in the rolling country of the north and east, and are characteristically fluted in districts where the phyllites and quartzites of the Karagwe - Ankolean system take the place of the Basement Complex. It is to this peneplanation of old rocks that Uganda owes her major topographic forms which, combined with a tropical climatic regime are largely responsible for the development of soils and vegetation in the Protectorate. The succession

i. Pediplaination according to L. C. King. South African Scenery. Chapter IV.

of level surfaces and the small range of altitude over most of the country has resulted in numerous, widespread lakes and papyrus-filled swamps. Swamps occupy the depressions between the flat-topped hills and also fringe the areas of open water. A further consequence of the lack of well-defined slopes is the almost complete absence of running water[i] except in the Nile (which carries the main drainage), and in the mountain regions where recent elevation and the consequent youthful stage of erosion produce conditions very dissimilar to those prevailing in the plateau areas.

Early (Pliocene) drainage was from east to west, probably to the Congo system and only a slight reversal was required to direct the flow to Lake Victoria and the Victoria Nile. A legacy of this former drainage pattern remains in the indeterminate drainage of a part of the Katonga valley and of the upper Kafu whose sluggish waters are useless for navigation and merely harbour disease-carrying insects.[ii] The whole country is now drained from south to north by the Nile system, whose tributaries tap the surrounding highlands and seasonally carry flood waters into the basins of Lake Victoria and Lake Kioga or into the trough of the Western Rift Valley. Many of these rivers, like the Aswa, are seasonal in their flow and though raging torrents for short periods after the rains, are at other times wide, dry, sand-strewn gullies.

Open water is officially scheduled as almost fifteen

i. Thomas and Scott. Uganda. page.63

ii. Maps 4 and 5.

per cent of the area, 13,689 square miles out of a total Protectorate area of 93,981 square miles but there is, as yet, no estimate of the total area covered by swamp, perennial or seasonal. Available maps show a wide variation in swamp areas and none indicate the criteria used to delimit these areas. Debenham[i] estimates that in certain areas swamps occupy twenty five per cent of the surface and though some provide a precarious water supply for man and beast, the vast stretches of stagnant water in the swamp-filled hollows and valleys are a perpetual menace to health.

Soils in nearly all tropical areas can be regarded as a function of climate and topography rather than of underlying rock, and the types and distributions of soils in Uganda suggest that, over long periods in the past, conditions in the area were similar to those obtaining to-day. For example, the murrum (lateritic ironstone) blanket which covers much of the country and masks the underlying solid geology is the consequence of vertical movements of otherwise stagnant ground water through a long succession of seasons;[ii] very much the conditions currently found in the Kioga Basin.

Topographically, the predominating feature in Uganda is the succession of flat-topped hills with intervening

i. Debenham. Report on the Water Resources of the Bechuanaland Protectorate, Northern Rhodesia, the Nyasaland Protectorate, Tanganyika Territory, Kenya and the Uganda Protectorate. Colonial Research Publication No. 2, 1948

ii. Tothill. Agriculture in Uganda. page.63.

swamps; this feature results in the production of a sequence of soils ranging from those developed on the crest of the low hills to the bottom soils of the adjacent swamps, the profile changing from point to point in accordance with the conditions of drainage and the past history of the land surface so that the distribution of soil types becomes a function of the local differences of level and slope which govern drainage. The difficulty of mapping such a sequence of soils whose pattern is repeated with various modifications over the whole plateau surface has been surmounted by Milne who uses the term 'catena' to indicate such a soil complex: Map 8 is based on the information given by Milne in the Provisional Soil Map of East Africa.[1]

More than seventy per cent of the soils of the Protectorate are developed on the Basement Complex and the resulting catena consists of four groups of soils ranging from a grey soil of the flat tops of the higher hills through the red earths and swamp-fringe soils to the dark, true swamp soils which are sticky when wet but dry out and shrink when dry. The important differences of quality and fertility of these widespread soils are due mainly to climate and vegetation; for example, the red earths of the drier short grass areas are lighter than those developed under forest or elephant grass on similar parent material and consequently are more quickly exhausted and more liable to excessive erosion. On the Karagwe - Ankolean rocks,

i. Provisional Soil Map of East Africa. G. Milne. 1936 Amani Memoirs.

also, soils can be sub-divided on a climate and vegetation basis. In wetter areas these soils tend to maintain a good structure and are thus noticeably fertile, this preservation of structure being characteristic of most of the volcanic soils which are among the most fertile in the Protectorate.[i]

But land potential, as measured by agricultural production, is dependent far more on climate than on soil and it is interesting that Thomas and Scott use climatic divisions as a basis for a geographical description of the country.[ii] Map 7 shows the main features of mean annual temperatures and rainfall throughout the Protectorate; the local influence of the marginal highlands and the moderating effect of Lake Victoria are striking features which tend to distract attention from the comparatively undifferentiated main surface of the country.

Mean annual temperatures bring out this contrast quite clearly. They are affected by the proximity of the equator and by altitude so that, though reduced by the height of the land, they show little seasonal variation. Over the greater part of the country the mean annual temperatures are remarkably uniform at approximately 70 F rising from 65 F in the higher south west to 75 F in the Lake Albert flats and the valley of the Albert Nile and showing a steep drop only in the mountain areas of Elgon

i. Map 8. Soils
ii. Thomas and Scott. Uganda. page.45. Also Map 11.

and Ruwenzori. This uniformity is not characteristic of mean annual rainfall which ranges from 35" p.a. in a broad south west - north east central belt (see Map 7) to over 65" p.a. in the mountain regions of Elgon and Ruwenzori. Areas of adequate rainfall (46" and over) are associated either with Lake Victoria or with the main hill masses. The whole central section of the country from south west Ankole north through the Kioga Basin to the Sudan border is thus an area of barely adequate and increasingly erratic rainfall. The basically equatorial regime which conditions the climate of the Protectorate results in rainfall reaching a maximum at the equinoxes and all stations show a double peak, March-May and September-October. In consequence the dry seasons culminate in January and June and may extend a month or two before and after these periods, depending on the actual location of the station. Evaporation is always high and, as much of the rain falls in heavy showers there is rapid run-off and the effectiveness of the rainfall is much reduced.

But it is not the mean annual figures, particularly in a tropical country, on which attention should be focussed: diurnal variations of temperature tend to be much greater than monthly ranges and there are wide variations in yearly totals from which the means are compiled. In Table I figures are given for the mean daily range of temperature at certain stations which shows an increase from the lower lying lake shore areas to the upland regions. Table II shows graphs for various stations indicating the duration of the dry season in different

TABLE I.

Mean Daily Range of Temperature
at
Selected Stations in Uganda[i]

Station	Altitude (feet)	Jan. °F	Feb. °F	Mar. °F	Apr. °F	May °F	June °F
Lira	3,612	31.7	29.4	25.0	22.6	19.1	19.9
Butiaba	2,036	14.2	12.7	11.4	12.0	11.8	12.1
Kabale	6,139	26.8	25.8	23.7	23.8	20.9	26.5
Fort Portal	5,050	27.4	27.7	25.9	25.1	23.9	24.7
Mbarara	4,721	22.6	23.3	21.0	21.0	19.2	23.2
Masindi	3,770	29.1	28.9	24.1	23.3	22.4	23.4
Soroti	3,655	30.1	26.9	26.2	22.8	19.0	18.9
Tororo	4,045	27.5	26.0	23.9	22.5	19.6	20.6
Kampala	4,306	18.0	17.7	16.4	15.3	14.4	14.7
Entebbe	3,878	17.1	16.3	15.0	13.9	12.6	13.8

Station	Altitude (feet)	July °F	Aug. °F	Sept. °F	Oct. °F	Nov. °F	Dec. °F	Year °F
Lira	3,612	17.6	19.7	21.4	23.3	25.8	27.6	23.6
Butiaba	2,036	10.7	10.9	11.1	11.6	11.4	12.8	11.9
Kabale	6,139	27.0	27.0	25.5	24.1	24.8	24.5	25.0
Fort Portal	5,050	22.2	21.2	21.7	22.3	22.0	23.7	24.0
Mbarara	4,721	23.3	22.1	21.0	20.5	20.3	21.1	21.5
Masindi	3,770	21.2	19.8	21.3	22.5	23.0	23.7	23.5
Soroti	3,655	18.1	18.5	20.3	21.8	22.7	23.5	22.4
Tororo	4,045	20.0	20.2	21.3	22.7	22.1	24.3	22.3
Kampala	4,306	14.8	16.1	17.0	17.7	17.5	16.8	16.4
Entebbe	3,878	14.4	15.1	15.9	16.4	16.8	16.0	15.3

i. British East African Meteorological Service

T A B L E II.

Annual and Monthly Climate Statistics
for
Selected Stations in Uganda

Annual

Station	Altitude Feet	Agricultural Region (see Map 11)	Mean Annual Temperature °F.	Mean Annual Rainfall Inches
Butiaba	2,036	IX	77.2	32.2
Arua	4,200	X	73.6	53.57
Gulu	3,642	XI	73.7	59.48
Lira	3,700	II(N)	74	54.38
Fort Portal	5,049	VII	66.3	56.92
Masindi	3,670	IB	73.1	51.03
Kabale	6,138	V	62.8	35.11
Mbarara	4,721	III	67.5	44.68
Soroti	3,655	II(E)	75.6	43.53
Tororo	4,045	IA-IV	72.6	61.84
Kampala	4,304	IA(Centre)	71.4	46.12
Masaka	4,327	IA(W)	69.8	42.54

Monthly

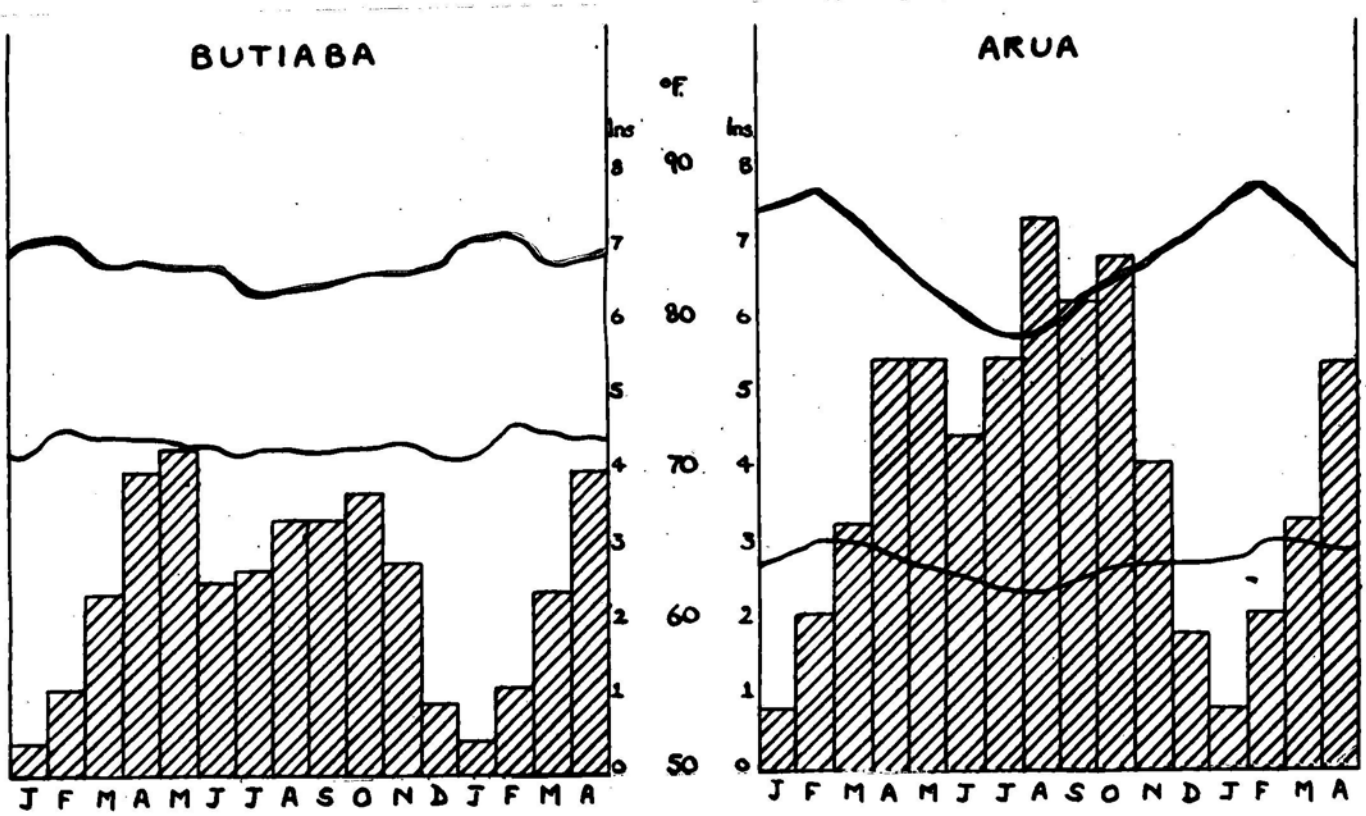
See accompanying graphs (pages13-15) in which a sixteen month period has been used to show the full continuity of all seasons.

——— Mean Monthly Maximum Temperatures

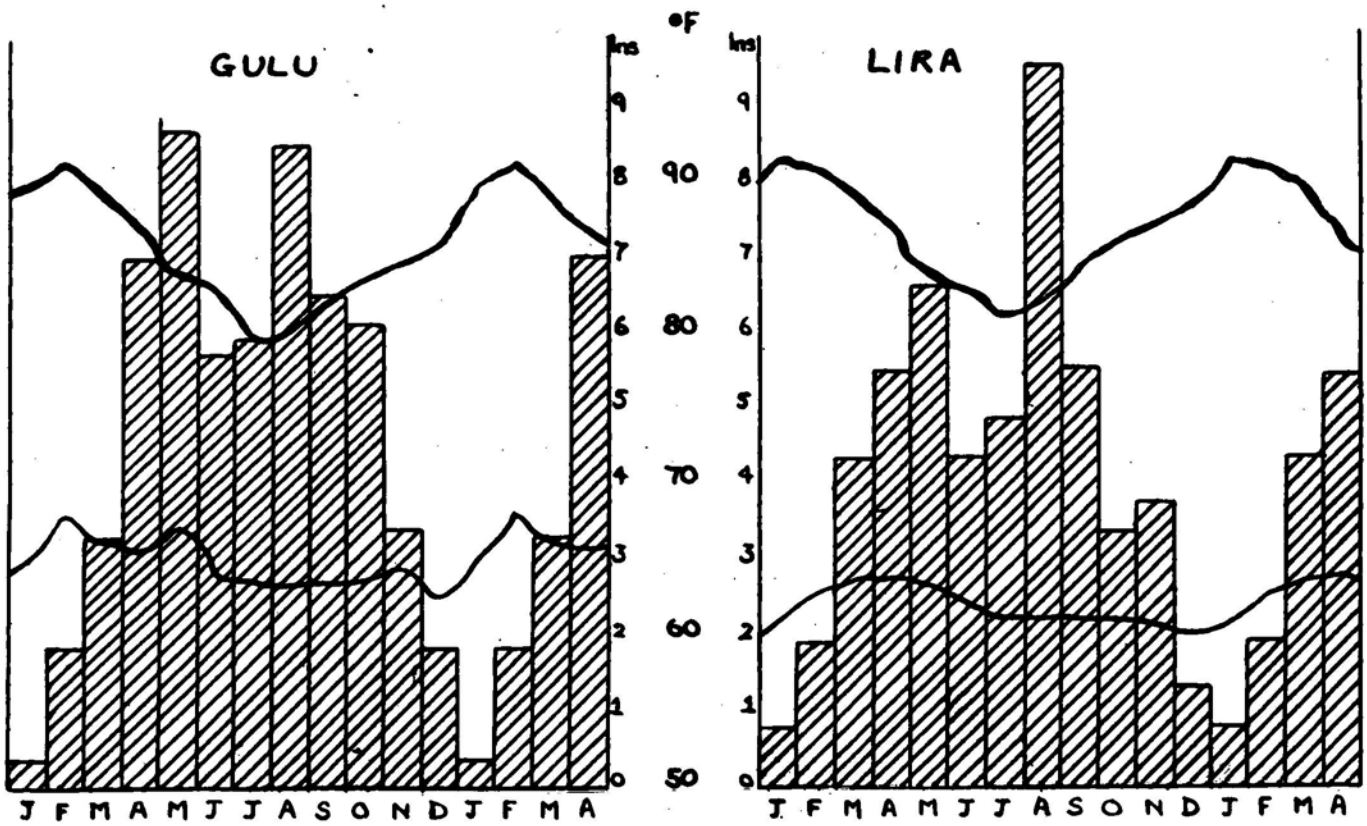
——— Mean Monthly Minimum Temperatures

▨ Mean Monthly Rainfall

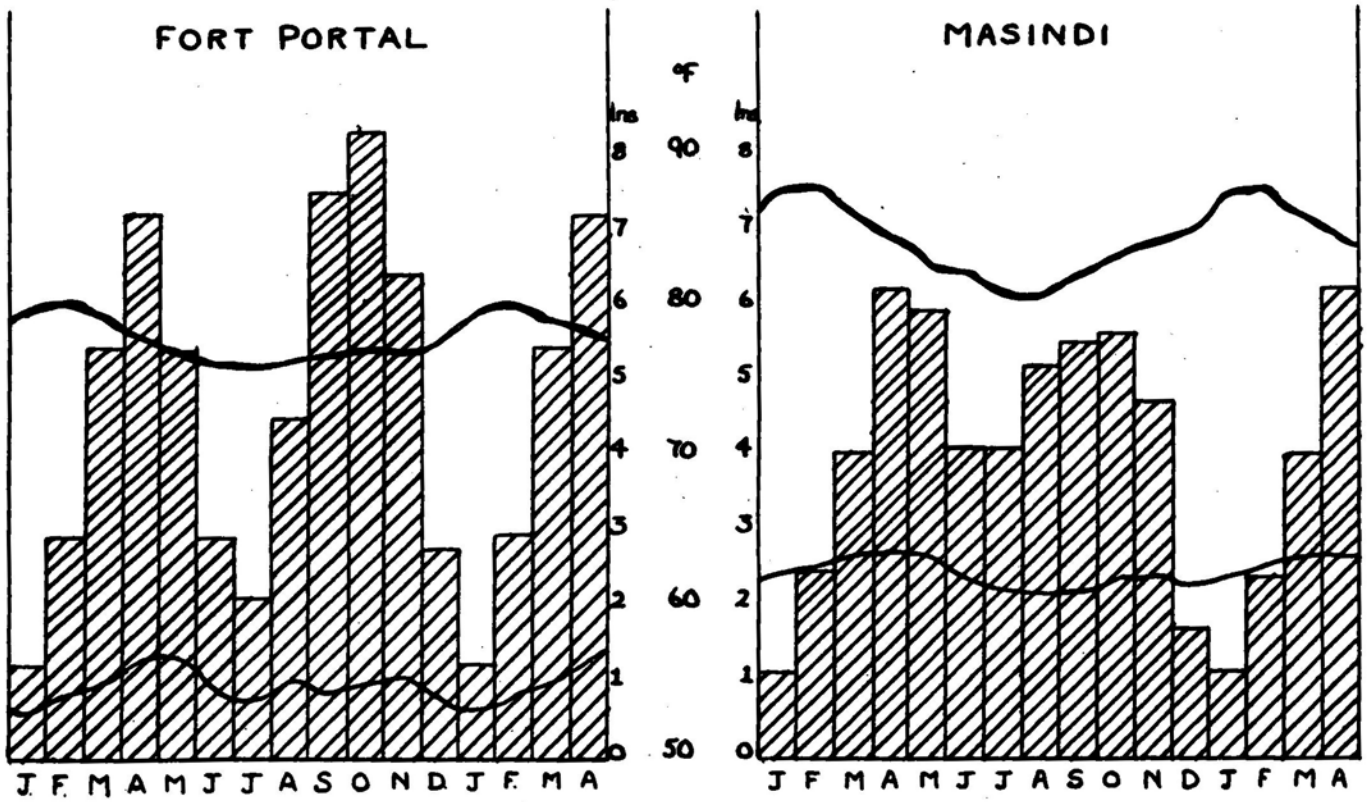
Authority. East African Meteorological Service.


BUTIABA
°F
Ins
8
7
6
5
4
3
2
1
0
90
80
70
60
50
J F M A M J J A S O N D J F M A

ARUA
Ins
8
7
6
5
4
3
2
1
0
J F M A M J J A S O N D J F M A


GULU
°F
Ins
9
8
7
6
5
4
3
2
1
0
90
80
70
60
50
J F M A M J J A S O N D J F M A

LIRA
Ins
9
8
7
6
5
4
3
2
1
0
J F M A M J J A S O N D J F M A


FORT PORTAL
MASINDI
°F
ins
90
80
70
60
50
8
7
6
5
4
3
2
1
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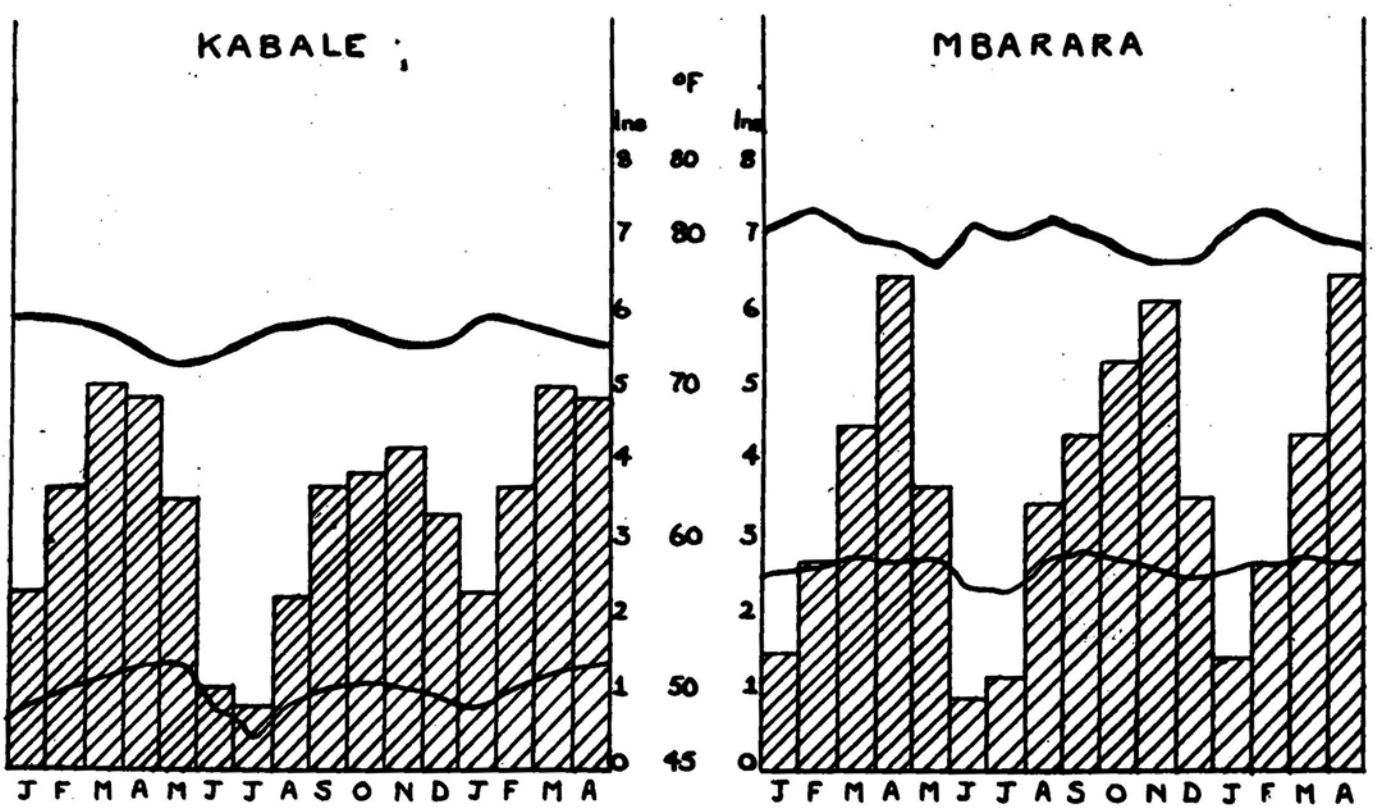
J F M A M J J A S O N D J F M A


KABALE
MBARARA
°F
ins
80
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45
8
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4
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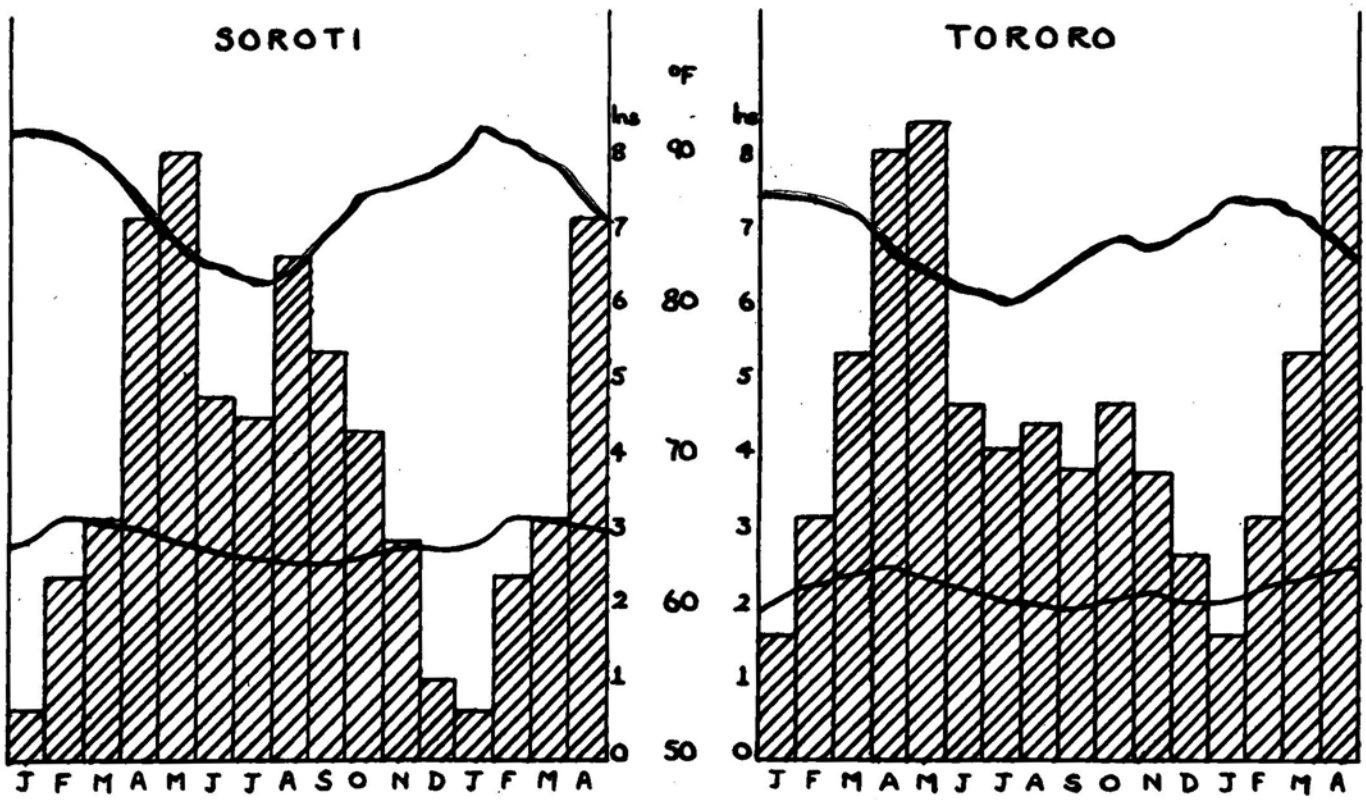
1
0
J F M A M J J A S O N D J F M A


SOROTI
°F
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4
3
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70
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50
J F M A M J J A S O N D J F M A

TORORO
Ins
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5
4
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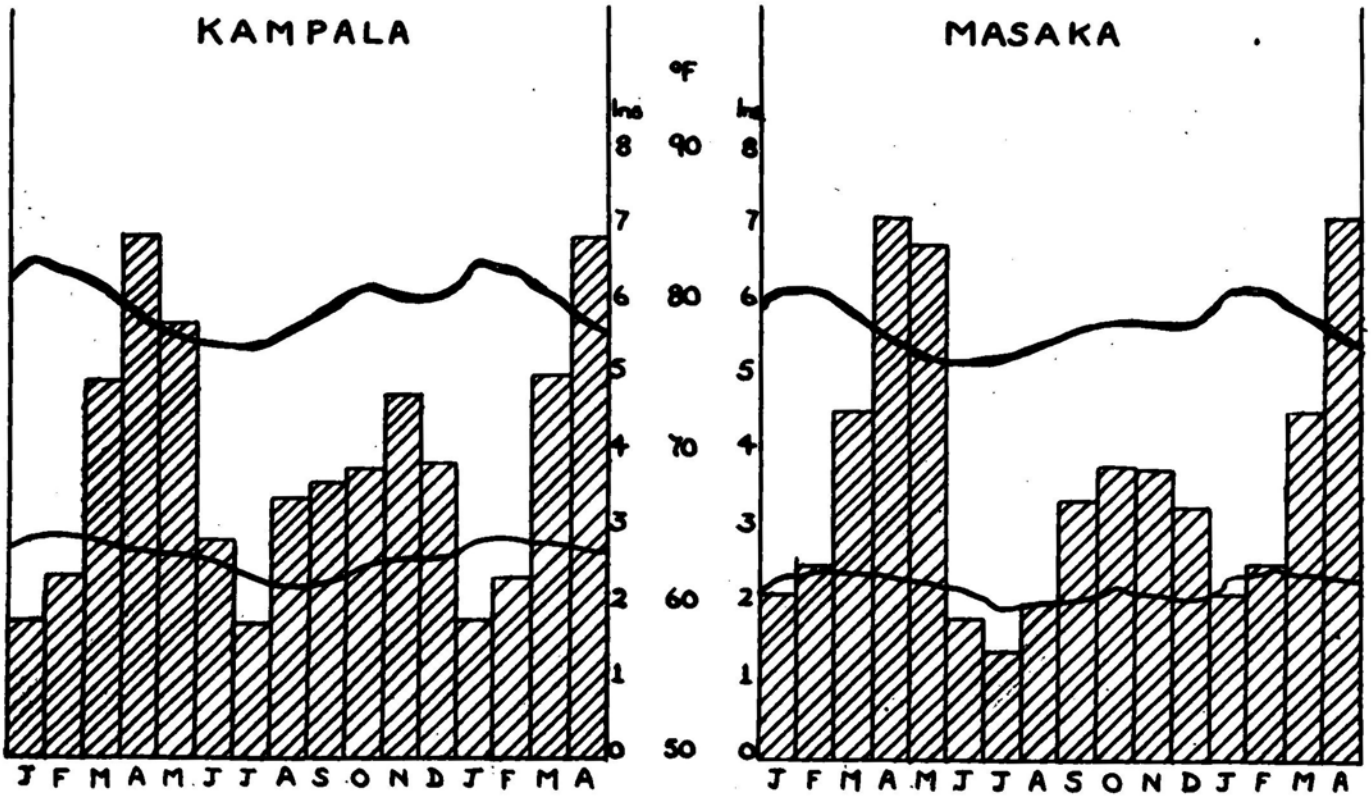
J F M A M J J A S O N D J F M A


KAMPALA
°F
Ins
8
7
6
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4
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2
1
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90
80
70
60
50
J F M A M J J A S O N D J F M A

MASAKA
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J F M A M J J A S O N D J F M A

agricultural regions. Early rainfall statistics are unobtainable but the record of famines in the early years appears to indicate considerable climatic variation. Reference[i] is made to the 1899 - 1900 famine when it was estimated that 40,000 people died from starvation in Busoga. In 1908 there was a further famine in the same area and throughout the whole period there are continual references to the uncertainties of weather as they affect both economic and subsistence crops. Even at the end of the period agricultural dependence on climate is recorded "Many crops were affected by the delay in the break of the main 1949 rains and production was generally at a lower level than in 1948".[ii]

Perhaps the surest indication of land resources is the vegetation cover, which is often regarded as the index of climatic and edaphic factors. But though vegetation can be a clear pointer to the present ecological balance it may not express the actual potentiality of the land, for if vegetation is accepted as a dynamic element it must be affected profoundly by the intervention of man and beast, both of whom are capable of modifying the vegetation cover of any particular area. Eggeling refers[iii] to the fact that at Moroto where there is approximately thirty six inches of rain per annum, fairly well distributed, there occurs the most striking development of semi-desert vegetation of acacia woodland and thicket, instead of the

i. Uganda Notes. June 1908 page.90.

ii. Colonial Reports. Uganda. 1949. page.7.

iii. W. J. Eggeling. A Review of Some Vegetation Studies in Uganda. Uganda Journal. Volume 12. No.2.

broad-leaved woodland that might be expected. He deduces that the present aspect of the vegetation in the east of Karamoja has been determined not only by rainfall and soil but also by the effects of settlement, cultivation and grazing.[1] Again, A. S. Thomas concludes that the main factors controlling the distribution of plants are soil, climate and the influences of man and stock. The last factor, in a country like Uganda, which has been populated for many centuries, has completely altered the vegetation cover and apart from the swamps, the higher zones of some of the mountains and the relatively small areas of virgin forest, none of the plant associations can be regarded as climaxes.

As far as can be judged the general vegetation pattern in 1900 was much the same as at present (see Map 9.) though there have been startling variations in detail. For example, in about 1900, prior to the sleeping sickness epidemic Busoga was known as the 'garden of Uganda' and travellers moving west passed through an unending succession of plantain groves. As a result of persistent famines and disease[ii] two out of every three of the population of South Busoga died and the remainder were evacuated from the disease-ridden lake shore to the interior of the district. In consequence South Busoga is now covered with heavy secondary forest, quite unlike the cleared areas of banana gardens of fifty years ago. It also appears probable

i. A. S. Thomas. Vegetation of the Sesse Islands. Journal of Ecology. Volume 29. 1941.

ii. Chapter III. Part I. Disease. page 111

that areas now abandoned because of tsetse fly infestation particularly in Mubende, Toro and Ankole are fast reverting to a bush which will replace the grazing grounds and habitations of the Bahima.

In vegetation and in subsequent agricultural development the fundamental division is that between short grass and elephant grass country which is mainly a division based on rainfall, both in amount and distribution. It is the opinion of the Conservator of Forests[1] that the present forest cover is comparatively young and probably dates from a time when a heavy human population decreased considerably, and permitted the regeneration of tropical forest. In recent times the practice of shifting cultivation and the cutting of timber for fuel have greatly reduced the total cover leaving mere remnants of 'closed' but a wide extent of 'open' forest.

This then, is the physical background of the country, profoundly altered in successive periods of geological history and influenced in detail by the occupation of man; an occupation which has scratched at the soil and plucked at the vegetation; probably encouraging the increasing desiccation of the semi-arid lands of Karamoja and possibly reducing the area of virgin forest by constant clearing and cultivation. Despite the depth of human imprint on the region the people who were found in possession of the country at the end of the nineteenth century, although perhaps not forced into their various occupations

i. Forest Department Annual Report. 1949.

by the pressure of environment, had adjusted their modes of living to the predominating influence of environmental possibility, touched, but not greatly modified by the prevailing standard of comparatively slight technical skill.

The full impact of western civilisation, as exemplified by the proclamation of the Protectorate in 1894 and the conclusion of the Uganda Agreement in 1900 came as merely the most recent of the invasions of conquering peoples who exercised political and social overlordship and whose occupation of the country resulted in racial modifications and tribal admixture. Evidences of the Hamitic incursions lie in the district of Ankole, in the domination by the aristocratic pastoral Bahima over the serf-like Bantu Bairu agriculturalists, for in this region the wide extent of suitable grazing grounds allowed the Bahima to control the whole area. In contrast are the conditions prevailing in Buganda where the compact nature of the elephant grass belt encouraged the strong political organisation of the Baganda and offered to the Bahima no opportunities of suitable grazing areas from which to exercise a close supervision of these agricultural people.

There is no evidence to suggest that a status quo had been achieved in the area immediately prior to British rule and the freezing of the supposed boundaries of tribal influence under a settled administration has led to some unrest and feelings of injustice. This only serves to emphasise the dynamic nature of human occupancy and to underline the necessity for treating the last fifty years as a period of evolution.

Part II.

Human Occupation in 1900.

At the time of British intervention in the affairs of the Protectorate there existed a number of groups of peoples, some well defined, some rather nebulous, whose ways of life were distinct and whose political systems varied in organisation and in efficiency. Along the shores of Lake Victoria, from East Busoga through Mengo to the southern half of the Masaka district lived a people predominantly of Bantu stock (mainly Baganda and Basoga), who were confined territorially to the elephant grass region, and were dependent for a subsistence crop on the cultivation of plantains. The characteristics of land form and soil of this area and the methods of cultivation strongly influenced the settlement pattern; this was one of scattered huts set among small banana gardens, situated on the middle or upper slopes of the flat-topped hills, and avoiding the swamp-filled, disease-ridden hollows. The permanent nature of the banana gardens served to stabilise the population which maintained contacts by numerous narrow red earth paths worn by the constant traffic between different huts; contacts were entirely social and were not dictated by economic motives. Neither necessity for defence nor difficulty over water supply served to concentrate population; within this homogeneous area each group was self sufficient in food stuffs and in clothing, thus obviating the need of markets for the exchange of goods.

This area is shown by Johnston in his estimate[i] of 1900

i. Johnston. The Uganda Protectorate. 1902. Map 14.

to maintain a population of over 100 persons per square mile in the region extending from the lake to thirty five miles inland, then grading to a lighter density of 61-100 per square mile on the landward side where the elephant grass fades out towards the short grass region. This area, together with the Lake Victoria islands, where fishing added an additional occupation and fish a significant item of diet, represents the highest densities in Johnston's map which excludes the West Nile and South West hill regions as being currently outwith the bounds of the Protectorate.

It seems likely that Johnston slightly over estimated the general density but there is no reason to doubt his estimate of the relative importance of the area, for, compared with the remainder of the country the lake side and island areas supported a high population, evenly distributed and dependent on a subsistence economy based on plantains which flourished on the tropical soils of the hillside constituents of both the Basement Complex and Karagwe - Ankolean catenas and for which the climate was suitable: an adequate rainfall well distributed being an essential as plantains will not tolerate a pronounced dry season. The only sizable town in the region was Mengo (Kampala) with a population estimated by Johnston at 77,000[i] but it is not clear what exact area he has included in this calculation: certainly Mengo as the seat of Baganda political power and the place of royal residence must have assumed great importance not only within the immediate

i. Johnston. The Uganda Protectorate. 1902. Volume I. page 104.

district but throughout the whole Province.

These relatively heavy population densities were therefore confined to the elephant grass belt[i] and densities became steadily lower with distance from the Lake. The same type of conditions and mode of life were found in the upland plateau areas of Toro and in central and south Bunyoro, with the exception of the Lake Albert flats which are hot and dry. Here again soils are developed mainly on the Basement Complex or Karagwe - Ankolean beds and rainfall is for the most part over forty six inches per annum.[ii] The agriculture of the Banyoro and Batoro followed much the same pattern as in the lacustrine areas though it was modified by conditions of slightly lower and less well distributed rainfall which seems to have been responsible for the importance of the small millet (eleusine coracana known locally as bulo) as an article of diet.

The introduction of an annual crop, (in this case the millet) as a staple, resulted in small movements of population more apparent in areas where soils, developed under lighter cover than those of the lakeside areas, were less fertile and more easily exhausted by the exposure necessary when an annual cereal is cultivated. These areas, therefore, showed a nucleus of settled population, dispersed as in the Busoga-Baganda area, with a tendency towards shifting cultivation from a settled village in the fringe areas where inadequate or ill-distributed rainfall

i. Map 9. Vegetation. and Map 11. Agricultural Regions.
ii. Table II.

prohibited dependence on plantains. Such 'shifting' as was practised was more a rotation of crops over a surrounding area than of dwellings; peasants worked such land as they thought fit for their various crops and moved to another nearby plot when the first showed signs of declining fertility; plots were not consolidated and ample land was available, held communally by the tribe and comparatively easy to clear because of the more open nature of the vegetation.[i] Johnston shows these areas to have population densities of forty six to sixty per square mile (the neighbourhoods of the three main centres, Masindi, Hoima and Fort Portal are shown as sixty one to a hundred per square mile) dropping away quite steeply in the north and south to densities of twenty one to thirty per square mile and, on the Bunyoro - Mubende border to eleven to twenty per square mile. This suggests a lightening of population with decreasing amount and increased unreliability of rainfall.

The short grass areas of Ankole and south Toro were primarily cattle country, ruled by the pastoral Bahima, a Hamitic aristocracy who exerted an influence if not an actual supremacy over the surrounding areas of Ankole, Toro, Bunyoro and to a much lesser extent, of Buganda. Here, in Ankole, lack of rainfall, lighter, less durable soils and difficulties of water supply made the area more suited to a pastoral economy which did not appear at that time to have been menaced by the presence of tsetse flies. Johnston suggests a light density of twenty to thirty persons per square mile for a population centred in villages of mean huts, with loose straggling thatch, surrounded by

[i] Map 15

a hedge of thorns and an area of trampled mud and manure, vegetation being kept clear by immense herds of cattle, sheep and goats.[i] These cattle did not form the basis of an economy dependent on animal husbandry but the size of herds was commensurate with the prestige and influence of the owner; large herds of often inferior cattle populated the grasslands, in some cases starting and increasing soil deterioration and erosion by concentrating round the water holes without in any way adding to the well-being or economic profit of their owners.

The same population density is shown for the Kioga Basin and its extensions east and west to the lower slopes of Mount Elgon and Ruwenzori. This is an area of flat savanna with a few rocky outcrops, the low rainfall resulting in a short grass vegetation developed largely on the less fertile black swamp-fringe soils which tend to be very sandy and liable to severe wind erosion as a result of over grazing. Around the fringes of the lake there is a great development of swampland which was almost useless, repellent to settlement, waterlogged in the wet season but providing supplementary pasture for small herds of cattle, sheep and goats in the dry season. The population consisted of small cultivators, dependent on grain and living in small villages; population concentration being allied to availability of water and to communal grain storage, a common feature in nearly all the grain areas. Lango villages were described[ii] as composed of substantially

i. Johnston. The Uganda Protectorate. 1902. Volume I, page.126.
ii. Colonial Reports. Annual. Uganda 1909.

built beehive huts with high pitched roofs, more or less compact but not stockaded. The people were extensive cultivators with shambas or gardens made in the bush behind the village, sometimes three or four miles away. This is an area where water supplies are regarded as very difficult because of seasonal and erratic rainfall and the lack of storage facilities in the flat down-warped plateau. Shallow wells were dug but these were apt to become clogged during droughts by clay drawn up in colloidal suspension with the water.[i]

Restricted water supply, grain storage and the growth of annual crops all favoured the concentration of settlement in small villages, from which the population worked the immediate neighbourhood but operated a partial seasonal migration to utilise the swamp pastures in the dry season. Villages were usually sited near the rivers but above the swamp level. Population density was low, particularly in the centre and western part of the Basin, but was probably higher in the eastern area where Bukedi was described[ii] as an almost perfectly level plain of remarkable fertility. Here, in distinction to the rest of the Kioga Basin there was a great confusion of tribes with lack of political cohesion and absence of villages; each family lived by itself within an enclosure of cactus and the whole county was dotted with small clusters of huts standing in fields of sim sim millet or.[iii] This appears to be an extension of

i. Thomas and Scott. Uganda. page.48.

ii. Colonial Reports. Miscellaneous. Uganda. 1908.

iii. Ibid.

conditions found in the Kavirondo area of Kenya and is one of the few areas in Uganda where scattered settlements are associated with a grain economy.

Conditions similar to those of the Kioga Basin obtained in much of Gulu and Chua (the present district of Acholi) where, with plenty of land available resting periods were much longer. It seems likely that in west Gulu as well as in the West Nile true shifting cultivation was practised, i.e. with cultivation round the village for about ten years and then removal of the whole village to a new site.[i] After a similar period the village reverted to its original position the old land being now rested and suitable for another spell of cropping. This system pre-supposes plenty of available land and stresses the contrast with the Kioga Basin.

Johnston shows an area of population density of thirty one to forty five persons per square mile extending along the eastern bank of the Albert Nile and reaching a breadth of twenty to thirty miles. This estimate would appear much too high and Johnston himself does not produce any justification for it, and indeed he emphasises that conditions of drought exist which would militate against the establishment of a fixed population.[ii] The population density was thus probably much the same as that prevalent in Acholi.

The uncertainty of rainfall which affects the lighter

i. Thomas and Scott. Uganda. page.115.

ii. Johnston. The Uganda Protectorate. 1902. Volume I. page.144. page.147

soils of these Northern Province areas is much more pronounced in the district of Karamoja where the mean annual rainfall falls below thirty five inches except in the upland areas of Debasien and Moroto. It is in this area that Johnston shows a range of densities from nought to ten persons per square mile at the eastern end of Lake Salisbury to forty six to sixty in the uplands north of Mount Elgon. There seems no justification for this high figure as at no time in the last fifty years could Karamoja have supported more than a light population of pastoral people whose nomadic habits were made necessary by the paucity of pasture and the extreme difficulties of water supply. It seems probable that it is this last factor which may have misled Johnston and his officials for when flocks were gathered together along the seasonal water courses and new pasture provided by the rains, the valleys must have appeared reasonably productive and quite well populated.[1] Though a few of the more favoured valleys may have supported a population which was semi-settled, yet the very nature of the country and the inability of the natives to conserve rainfall has meant a perpetual wandering by these pastoral people with a resulting low population density over the whole district.

To the south of Karamoja, to the east of the Kioga Basin and north of the elephant grass area lies Mount Elgon, where Johnston shows high densities of forty six to a hundred per square mile on the southern and western slopes. This is the region of Bugishu, described by the

1. Johnston. The Uganda Protectorate. 1902. Volume I. page. 63.

Governor in 1908[i] as an area of broad, gently sloping valleys between the spurs of Mount Elgon with cultivation extending to the summits of the hills. It was estimated[ii] that eighty per cent of the land was under cultivation and that the areas left untilled were used as pasture for herds of cattle and goats. The whole area gave the appearance of being cut up into little plots, each defined by hedges of giant thistles and the whole dotted with the huts of the Bagishu, who, like the peoples of the elephant grass region were not gathered together but scattered their habitations among the banana gardens. The same report contrasts the conditions found in this area with the rest of the Protectorate where there exists enormous areas of land of marvellous fertility, but almost devoid of human beings. This state of affairs is explained for the one part by the fierce and independent nature of the Bagishu and the natural defences of the country which were calculated to be sufficient protection against the Arab slave traders (who had decimated the population of the surrounding districts) and for the other part by the higher and healthier land which provided some protection against the ravages of disease. But this report was made in 1908 when the whole lakeside area had suffered depopulation as a result of the sleeping sickness epidemic, and this would undoubtedly give a strong contrast between the lacustrine area and the valleys of Mount Elgon.

In or about 1900, therefore, the population of the

i. Colonial Reports, Miscellaneous. No. 57. Uganda.
ii. Ibid

country was probably grouped generally as shown in Map 15. The main factors responsible for the differentiation of these relative densities appear to be the amount and distribution of rainfall and the resulting water supply, which separated the peoples dependent on plantains from those producing grain as a main subsistence crop, and divided nomadic and settled pastoral peoples. Climatic factors themselves show the influence of Lake Victoria and the major bordering highlands.

The clean-cut division, based on tradition and on environment, of agriculturalists and pastoralists lies between the almost pure Bantu agriculturalists of the elephant grass areas and the Bahima pastoralists of Ankole. Beyond the boundaries of these areas cattle, sheep and goats are kept by people in the remaining short grass areas. In these regions the much more open nature of the rolling savanna country provided good pasture, enhanced by dry-season burning which was reckoned to encourage the growth of new grass but which had the further effects of preventing the development or regeneration of tree growth and may well have been a deterrent to the spread of the tsetse flies. This combination of crops and herds was not mixed farming in the true sense as no fodder crops were grown and manure was put to no use.

Generally speaking, systems of land tenure, however they may have differed in detail, assured to each man as his right sufficient land to maintain himself and his family without in any way raising the question of individual ownership. Individual rights were recognised, that is to

say that a single individual, or two or more close relatives, had definite rights to a particular plot of ground and to its produce. These rights, however, were qualified by membership of a family, clan or local group. Further, they were limited to the period of effective occupation and were restricted in respect of succession; neither sale nor transfer of these rights being permitted.[i] Land in Africa was regarded as one of the essentials of life and as a medium for the production of food. The idea of the individual definitely possessing land of his own was not contemplated.[ii] European conceptions of land holding thus had no counterpart in Africa.

Concentrations of population where they occurred in the form of small villages were conditioned by factors of the physical environment and were not created as centres of exchange or communications. Villages were a significant feature of nearly all the short grass areas except in the plains of the Eastern Province where, despite difficulties of water supply and a predominantly grain economy the population remained grouped in small family aggregations; significantly, it was the one area in the Protectorate where the settlement pattern did not appear to be conditioned by the physical environment.

The various population regions show characteristics of type of life and settlement which could be matched by differences of political and social organisation. The

i. Meek. Land Law and Custom in the Colonies. page.17.
ii. Tothill. Agriculture in Uganda. page.24.

outstanding feature was the lack of economic links; an absence of dependence of one environment on another and of resulting exchange. Migration movements appeared to be insignificant for although Arab slave raiding had probably affected the eastern and northern areas and the rising political power of the Baganda had harassed near neighbours such as the Basoga, yet neither Arab nor African had consolidated economic or political supremacy. Grouping was mainly tribal and environmental. The factors which operated to stabilise conditions lay in the self sufficiency of the various regions and, by comparison with West Africa, in the lack of strength and solidarity of the peoples of the marginal savanna areas who might have been in a position continually to harry the more settled tribes.

CHAPTER II.

ENVIRONMENT AND PRODUCTION

Part I.

1900 - 1920.

As indicated in the previous chapter the native populations of Uganda were, at the beginning of the period, as at the end, mainly dependent on primary production of either crops or stock as a basis of livelihood. The increasing importance of cash crops in the general economy, reflected in domestic exports valued at £28,669,157 in 1950, indicates a more varied, and in some cases, a more intensive use of the land; but no fundamental change in outlook. The African has remained deeply attached to the land and only at the very end of the period was consideration given to projects of industrialisation, and to the development of important secondary industries. It is to be expected, therefore, that no startling changes in production or population will be revealed but that the fifty years will show the gradual transformation of the purely subsistence economy to one in which cash crops take pride of place.

In 1900 the potential riches of the Protectorate appeared to lie in the natural advantages offered by the particular conditions of soil and climate for the production of a variety of economic crops, provided that these resources could be exploited by existent labour. The native, however willing he might be to learn new techniques was limited in his experience to working on

the land and, at least in the early years, the wisest course was to take advantage of this potential and attempt to graft on to the predominant subsistence agriculture a production of economic crops which, in the course of time, would provide the financial resources needed so desperately as a contribution to the cost of administration and for the social services which themselves were regarded as a partial justification for British control.

The level of prosperity in the Protectorate in 1950 (imports valued at £15,712,288 and exports at £28,669,157) is an indication of the success of this policy.[1] Population has increased in numbers, and, despite many setbacks, the people are healthier, better fed, better housed and more literate than were their predecessors. The country as a whole, which was torn by rivalries between competitive Kingdoms, is now a well-knit community in which each region, while retaining its own characteristics and. for the most part, its own people, is a part of an established economic unit whose place in the world is based securely on an increasingly diversified economy whose backbone is peasant production.

While acknowledging the manifest success of the Administration in placing the country in a sound economic position it is relevant to consider if this initial production has been one of 'robber economy' by which the natural resources of the Protectorate have been diminished

1. Treasury Grants and funds made available under Colonial Development and Welfare schemes are not taken into consideration: reference is made to these elsewhere. Chapter II Part II page.62 Chapter VI page. 234

or exhausted or whether the fifty years of development has resulted in a fuller knowledge of those resources and in a policy designed for their conservation. At every stage attention will be focussed in this account on the significant environmental features which have affected economic development and, consequently, population, for a balance must be maintained between the size of the population and the productive capacity of the land, a capacity which is dependent not only on actual resources but also on current technique.

Native production in the 1900 period was entirely for subsistence, no surpluses were produced for storage or exchange with the result that, particularly in the grain and pastoral areas the frequent failure of rains caused disastrous famines. Type of life and production differed in the three main areas: (1) the elephant grass regions dependent on plantains, (plantains are not successful in areas with a pronounced dry season), (2) the short grass areas with a shifting cultivation dependent on bulo (eleusine) as the staple, but where herds were also kept for prestige and not for production, (3) areas where, mainly because of lower and more uncertain rainfall, vegetation was of a semi-arid type, the emphasis being on pastoralism. These categories can be correlated with the Map of Agricultural Regions[1] where the plantain eaters are found in Regions Ia and Ib, IV, and VII; grain eaters in Regions II, V, VIII, IX, X and XI; pastoralists in Regions III and VI.

1. Map 11.

This Map[i] is an attempt to summarise the conditions found in the Protectorate as they affect the agricultural potential. It is based partly on the agricultural areas listed by Tothill[ii] but his plan has been developed further to give an overall picture. In some respects the map approximates to that of vegetation[iii] but there are important differences. For example, the separation of Toro from the main elephant grass areas depends mainly on climate, for the district is affected by its position in relation to the mountain mass of Ruwenzori. In Kigezi topography, climate even and soils (whether volcanic or developed on the Karagwe - Ankolean series) present individual features, while Karamoja and Ankole merit separate grouping on account of different problems in respect of both environmental conditions and actual developments. Map 10 shows the 1946 position as regards water supplies and this fundamental problem has borne heavily on the 'arrangement' of the farming community; a point to which further reference will be made.[iv]

In the early years when the Government was striving after administrative consolidation the areas which came under most careful scrutiny were, quite naturally, the productive elephant grass areas of Buganda and Busoga in which the population was relatively dense and comparatively static, as it depended on the perennial plantain. By contrast less attention was paid to the areas of short

i. Map 11.
ii. Tothill. Agriculture in Uganda. pages 8-10.
iii. Map 9.
iv. Chapter II Part III. page. 95.

grass where widely shifting cultivation was made possible by dependence on an annual grain crop. These lakeside areas also had the great advantage of accessibility, which has exerted a profound influence at every stage of development in a territory 600 miles from the nearest port and where adequate communications were almost entirely lacking. Transport depended on native porters, roads were nonexistent and exports were dispatched by lake to Port Florence.

Johnston, as Special Commissioner and Governors who followed him being obsessed with the possibilities of European settlement within the Protectorate, set aside areas for this purpose in both Buganda and the Western Province.[1] But this resulted in little more than spasmodic bursts of activity in Toro and in a series of experimental trials of possible plantation crops while attention was focussed almost exclusively on the native production of economic crops, located in the elephant grass zone of Buganda and Busoga.

Faced with a population devoted entirely to self-subsistence Government were forced to find a crop which would tolerate the environment, could be grown under peasant conditions, and finally would give a product which could stand competition in the world's markets both on the score of quality and of ability to withstand the very

1. Johnston's dreams of extensive white settlement in the eastern highlands must have been shattered with the transfer of the Eastern Province to the East African Protectorate in 1902.

considerable transport costs involved. Experiments were started with cotton, a crop which was growing in the Protectorate prior to 1900 though it seems unlikely that it was indigenous.[i]

From 1903 a number of varieties of cotton were introduced by Government and by private persons and the initial success of the crop suggested that the country appeared to be well-suited to the production of cotton. There is no type of soil in Uganda which will not give a reasonable yield under suitable conditions of climate and cultivation; and over a wide area of the Protectorate the climate is permissive though yields vary, as much from methods of cultivation (especially time of planting) as with the actual variation in climate.

Cotton became established first in Buganda where seeds were distributed by the Government to native cultivators. Careful supervision was exercised and constant help and encouragement given by Government Officers so that by 1906 cotton had already made its mark on the country as its principal industry, and the bulk of the population within easy access of shipping will be occupied by it to an extent, indeed, that makes it appear as if attention to other products will be given merely as a distraction.[ii]

Average agricultural holdings in Buganda appeared to be about eight acres of which three acres were devoted to

i. Tothill. Agriculture in Uganda. page.183.
ii. Colonial Reports. Annual. Uganda. 1906 - 1907.

the banana garden, three acres to cotton and the balance to secondary foodstuffs. The most normal practice was to crop the land for three to four years and then rest it for a similar period; land used for this restricted type of shifting cultivation had to be close at hand, for the banana garden was a stabilising factor as such a garden maintained in good condition will crop for upwards of thirty years and may continue to do so for fifty or even sixty years.[i] The siting of these areas of cultivation reflected the peculiar hill and hollow topography of Buganda with its associated soil catena. For the establishment of the plots early cultivators usually chose the red earth zone which allowed them the advantage of deep soils of excellent structure. Here soil structure is maintained under plantain cultivation by the use of a mulch, of old leaves strewed on the ground and is therefore protected from erosion. It is to be noted too that Buganda cultivators still choose, if possible, stony, open soils for cotton cultivation. These yield well, possibly because of their porosity and good drainage for cotton can endure moderate periods of drought much better than water-logging. Cotton cultivation with its necessary clearing and wide planting brought quite a new problem of maintenance of soil structure which apparently passed unnoticed in the early years; at least there is no specific reference to it in current reports.

Under these conditions of cultivation the introduction of cotton as a cash crop caused no fundamental upheaval in

i. Tothill. Agriculture in Uganda. page.114.

the lakeside areas of Buganda and Busoga. The small collection of dwellings remained intact, dotted about the green hillsides, each family working a nearby area and connected with surrounding areas by the bright red tracks which led in every direction across the countryside, crossing the numerous swamps by means of rough causeways. A few market centres existed for the exchange of goods but villages in the true sense were absent and though the first experiments in commercial crops may have encouraged a slight general increase in population by the acquisition of wealth and the need for extra labour, yet the fundamental pattern of population remained unchanged.

In conditions similar to those found in the elephant grass regions of Buganda, cotton was introduced into Busoga in 1905 - 1906 but instead of being confined to this zone it spread northwards and by 1908 - 1909 was being grown in Bugwere, Budama and Teso.[i] This was the beginning, not only of the spread of cotton into the short grass areas but also of the great pre-occupation of the Eastern Province with cotton production.

It is not easy to disentangle the factors which have influenced this concentration of cotton production in the Eastern Province, but they appear to be as follows. The 1900 Uganda Agreement had provided for a system of land holding in Buganda which admitted private ownership of about half the total area of the Province being assured in private possession to the king, his relatives and chiefs

i. Colonial Reports. Annual. Uganda. 1908 - 1909

who were considered to be in occupation at the time: the remainder, largely swamps and forests, became the property of the Crown. Plots, delimited by survey, were registered in the mailo register and the owner then received a title (after payment of the necessary fees). This title could be transmitted by inheritance, gift or sale, provided that the transactions took place between natives and did not result in the alienation of land to non-natives. This system, which arose from a misunderstanding of tribal procedure soon resulted in a new native conception of private ownership in which land had a monetary value. By initial grants, the king and chiefs were at first in the position of landlords who had it in their power to rent or sell the land assured to them to those willing and able to buy. (Land has fetched from 5/- to 100/- per acre).[i] In the first instance, most of the population were tenants to whom was allocated sufficient land for a house, banana garden and a small area under annual food crops. Surveys indicate that holdings in 1930 were five to ten acres.[ii] A further complication lay in the obligation of tenants for busulu or rent, formerly paid in kind or by labour, (though it later became a money tax) and envujo which consisted largely of obligations in kind. Later envujo was assessed on the acreage under economic crops and was paid in cash, indicating the significance which economic crops assumed in normal peasant farming but also discouraging cash crop production by this

i. Tothill. Agriculture in Uganda. page.26.
ii. Ibid. page.26.

additional tax.

This complicated arrangement both in its evolutionary stages and in its final form must have had some influence on the ability of the Agricultural Department[1] to set aside land for experimental cropping, on the care with which officials had to tread in the maze of landlords' and tenants' rights and obligations, and also it appears to have contributed to the rather slower expansion of Government sponsored economic crops in Buganda than in the Eastern Province where these disadvantages did not obtain.

Further, the extent of elephant grass in Buganda is limited to a strip of about fifty miles wide in which the population was concentrated and where a modest system of roads carried the local traffic of the area. Without a coordinated plan for the improvement of transport facilities, cotton marketing was doomed to failure. Road making in the Buganda elephant grass area involved heavy and expensive clearing. Markets were opened in Buganda to which cotton was brought entirely by headloads and then exported via Port Bell to Port Florence (Kisumu) the railhead for the line from Mombasa which had been opened in 1902.

One of the major problems facing the Protectorate during all its stages of development has been the almost continuous labour shortage. In Buganda, despite a

1. Formed in 1907.

population estimated at 650,000 in 1906, the Government's labour supply for public works, including porterage had by 1908 diminished from adequacy to acute shortage.[1] The various contributory factors of traditional superiority of Baganda over neighbouring peoples, the smaller families of Baganda as a consequence of the low fertility of Baganda women and the amount of clearing for cultivation required by the conditions of the elephant grass region led to the employment by Baganda of neighbouring tribes, in the first period mainly Banyoro and Batora with a few migrants from Busoga, Budama, Bugishu and the Kavirondo Gulf. But it was necessarily some years before this system of labour for African producers had reached a stage when it ceased to exercise a restricting influence on the amount of cotton grown by Baganda farmers.

Although these various factors tended to slow down the acreage planted and the amount of crop produced, it is likely that these restrictive influences operated mainly in opposition to the wide field for almost unlimited expansion of cotton production which lay open in the Eastern Province, as in this latter area land tenure methods, accessibility and labour supply were all more favourable than in Buganda.

Cotton in the Eastern Province assumed outstanding importance soon after its introduction into Busoga in 1905 - 1906. Acreages at four year intervals show the spread and extent of the crop.

1. Colonial Reports. Annual. Uganda. 1908 - 1909.

Cotton Acreages
Eastern Province.[i]

1910 - 1911.....15,000
1914 - 1915.....88,000
1918 - 1919.....105,000
1922 - 1923.....303,000
1926 - 1927.....402,000
1930 - 1931.....516,000
1934 - 1935.....715,000

The introduction was made first in Busoga where conditions approximated to those found in Buganda but cultivation soon spread northwards into Budama, Bugwere and finally into Teso where in 1908 experimental plots were reported to be doing well.[ii] Extension of cotton into the short grass areas was a step the importance of which it is difficult to overestimate. Cotton is now grown in nearly all the grain areas as the most important economic crop and though the soils usually found in these areas tend to be lighter than those of the elephant grass area, yet with careful cultivation fertility can be maintained and a good yield secured. Most of the Eastern Province short grass area has a rainfall of forty to fifty five inches per annum with a pronounced hot dry season from November to March[iii] and these conditions allow of planting in May or June, after the spring rains, and

i. Tothill. Agriculture in Uganda. page.202.
ii. Colonial Reports. Annual. Uganda. 1908 - 1909.
iii. See Table II. page.12

harvesting in the dry months of the hot season.

Land in the Eastern Province is held by the Crown, which also has rights over timber and minerals but all land is available for use by the native population, every man holding the land he occupies for as long as he has need of it. In comparison with Buganda this system made agricultural development, especially of economic crops, much easier and in addition permitted land to be set aside for experimental purposes.

The introduction of cotton into an area where subsistence depended on an annual crop meant a fundamental change in rotation in which cotton now took pride of place, being planted in virgin land as soon as it had been cleared and prepared. The cotton crop was usually followed by bulo and sweet potatoes, In the south, cereals furnished an additional crop but in the north, where rainfall tends to be a limiting factor groundnuts were important on the sandy soils. After three years cultivation the land was either sown down to cassava which may be harvested any time within three years, or merely left to revert to bush for a resting period of three to seven years. On the whole, climate and soils decrease in adequacy from south to north, from the elephant grass region of South Busoga to the marginal land of North Teso, and cotton yields showed the same trend.

The cotton produced in the Eastern Province was exported from Jinja to Port Florence and a great drive was made to improve communications in the Province in

order to encourage the greater production and marketing of cotton, and, as communications improved so cotton cultivation spread over a wider field, being introduced into Lango in 1909, Gulu in 1912 and Chua in 1916. The 1910 - 1911 position which reflects the early pre-eminence of Buganda and the slight extension to the elephant grass areas of Toro, Ankole and Bunyoro is as follows:-

Acreage under cotton[i]
1910 - 1911.

Buganda	22,000 acres	
Busoga	8,000 "	13,500 acres
Kumi	4,500 "	
Mbale	1,000 "	
Lango	600 "	
Bunyoro	2,000 "	
Ankole) Toro)	3,000 "	
Total	41,100 acres	

In 1909 an agricultural experiment was initiated which had far reaching consequences; an attempt was made to instruct Budama chiefs in the use of ploughs.[ii] African native agriculture is basically hoe agriculture which, apart from other considerations has advantages in that only small areas of ground are laid bare to the effects of erosion during the cultivation cycle. Essentially,

i. Tothill. Agriculture in Uganda. page.184.
ii. Colonial Reports. Annual. Uganda. 1909 - 1910.

the method pre-supposes small plots and abundant labour and is a factor contributory to the Baganda habit of employing paid labour in their cotton plots. Ploughing, when introduced, soon took root in much of the Eastern Province; the districts which most favoured this technique were the short grass areas of the eastern Kioga Basin where the bush was not too dense to entail great labour in clearing before ploughing could be started and where there were large herds of cattle available for power. Therefore, it was in Teso and Bugwere that the use of ploughs increased most rapidly and the great growth in cotton acreage in these districts from 1918 onwards has been attributed to this cause.[i] (even in Busoga the use of the plough is mainly confined to immigrants from Teso). A ploughing school was established at Kumi in 1910 and though the first ploughs were made of wood on the Indian pattern European iron types were soon introduced thereafter.[ii]

In consequence of these various developments, by 1912 - 1913 Teso was the largest cotton producing centre, a situation which was ascribed in a report[iii] as due in large measure to the advantages of climate, soil and position but partly to the particularly amenable disposition of the inhabitants. Certainly, a good deal of weight must be given to the last condition, as it can hardly be maintained that in Teso the other factors mentioned are predominant in comparison with the rest of the Eastern

i. Fothill. Agriculture in Uganda. page.202.

ii. In 1916 there were 100 ploughs in Teso and in 1924 1,000 ploughs in Kumi County alone.

iii. Colonial Reports. Annual, Uganda. 1912 - 1913.

Province. In respect of climate it tends to be marginal, particularly in North Teso; so far as the soil is concerned Teso contains quite a proportinn of black swamp soils which are useless for cotton and the remaining soils tend to be light and easily eroded. In position Teso is less advantageously placed than South Busoga, Budama and Bugwere.

The measure of increased general prosperity is given in 1909 - 1910[i] when the Hut Tax was increased on the basis of the argument that incomes had increased considerably because of successful cotton production which was regarded already as an established industry in the Protectorate.[ii] Cotton was still exported ginned and unginned and the total figures for the first few years are as follows:-

Uganda Protectorate

Export of Cotton

(ginned and unginned)[iii]

	Weight	Value
1904 - 1905.....	10 tons.....	£ 235
1908 - 1909.....	1,152 "	£41,232
1909 - 1910.....	2,116 "	£59,596

Despite this overwhelming concern with cotton which was fast bringing hitherto unthought of wealth to many of the population of Buganda and the Eastern Province it was still hoped that European plantations would expand side by side with the native production of commercial crops.

i. Colonial Reports. Annual. Uganda. 1909 - 1910.
ii. Ibid.
iii. Ibid.

"(there is) every prospect of this Protectorate becoming a great planters country"[i] and experimental plots of rubber, coffee and cacao had already been begun; these crops were considered to be particularly suitable and it was proposed to alienate land, particularly in the more healthy Western Province, for the development of European plantations. In the year 1911 - 1912 there was a considerable increase in both the number and the size of European estates especially those concerned with coffee[ii] and in 1913 - 1914 European cultivation covered approximately 20,000 acres;[iii] the majority of plantations were in Buganda with smaller areas taken up in Busoga, Toro and Bunyoro: by 1915 - 1916 the acreage had risen to 25,184 comprising 157 estates.[iv] Coffee, rubber and cacao remained the most promising crops while experiments were carried out with tobacco and tea. All these ventures were hindered by labour difficulties and the main labour available consisted of Baganda who preferred working on European plantations to being pressed into the kasanvu system of forced labour.[v] This suggests that the impact of European agriculture on the country in early years was insignificant and that its requirements did not cause any appreciable flow of laboour into or out of the immediate neighbourhood of the plantations.

In the field of native cultivation experiments were

i. Colonial Reports. Annual. Uganda. 1909 - 1910.
ii. Colonial Reports. Annual. Uganda. 1911 - 1912 & 1912 - 1913
iii. Colonial Reports. Annual. Uganda. 1913 - 1914
iv. Colonial Reports. Annual. Uganda. 1915 - 1916
v. See Chapter IV. page. .

made with rice but it was found that the rainfall was just too low for the upland variety though some swamp varieties showed promise particularly in Bunyuli where it became established as a local crop. Nevertheless the predominance of cotton was bound to affect the establishment and development of other crops and the 1913 - 1914 Annual Report makes reference to a tendency to a decrease in crops other than cotton. This, however, only affected districts where cotton was an established crop; in Lango, for example, where communications were more difficult and where the percentage of land under cotton was not so great, sim sim was produced for export and good crops of wimbi, sweet potatoes, beans and groundnuts were produced for home consumption.

Meanwhile the acreage under cotton continued to increase[i] and the quality of the crop showed general improvement by a combination of careful seed selection and by improvement in methods of native cultivation particularly in cleaner weeding. Although conditions in the various growing areas were considered adequate for cotton cultivation the great yearly fluctuations in rainfall distribution and quantity had an immediate effect on cultivation. The year 1911 - 1912 was comparatively dry[ii] and conditions interfered with the regular cotton sowing (May in most areas) but it is significant that, although affecting cotton, the dry spell did not have a

i. Colonial Reports. Annual. Uganda. 1913 - 1914, 1914 - 1915, 1916 - 1917, 1918 - 1919, 1919 - 1920.

ii. Colonial Reports. Annual. Uganda. 1911 - 1912.

serious effect on food crops which suggests that cotton is more susceptible to climatic irregularities partly because there is little latitude possible in the best time of planting and delay may seriously affect the yield. Equally, wet seasons may bring low yields because of the prevalence of cotton diseases. Again in 1912 - 1913 the cotton season was disappointing as the crop suffered from seasonal drought;[i] in 1916 - 1917 the Eastern Province suffered from abnormal rains from which the cotton crop suffered severely[ii] and in the following years climatic conditions were unfavourable to both cotton and food crops to such an extent that famine was prevalent in the Eastern Province and food shortages affected the remaining parts of the country.[iii] Famine relief was again necessary in the year 1919 - 1920.[iv]

It does not appear that this famine can be attributed to a neglect of food crops in favour of cotton, as food supplies in most years appeared to be perfectly adequate and the 1918 - 1919 famine was the result not of the failure of one wet season but of three consecutive ones. The estimate of deaths from starvation is given as 4,419 in Busoga, Bukedi and Teso alone,[v] a situation which had serious repercussions as this period of severe food shortage coincided with the great influenza epidemic. It also emphasises the variability of rainfall in this area, which must be regarded as marginal under conditions of native

i. Colonial Reports. Annual. Uganda. 1912 - 1913.
ii. Colonial Reports, Annual. Uganda. 1916 - 1917
iii. Colonial Reports. Annual. Uganda. 1917 - 1918, 1918 - 1919
iv. Colonial Reports. Annual. Uganda. 1919 - 1920
v. Ibid.

agriculture, dependent on annual grain crops.

On the whole, the native cultivator had 'taken to' cotton with enthusiasm and success and the great increase in production, mainly from increased acreage but partly from improved yield produced a crop which in 1907 - 1908 formed 35.27% of the total value of domestic exports and in 1920 91.63%[i] (the value of the exports themselves having risen from £116,001 to £4,134,136). Increase in production necessitated a more fully organised and adequate system of marketing. Up till 1915 part of the crop was ginned before export and the remainder was ginned at Kisumu before dispatch overseas, but after that date Uganda ginneries handled the whole crop which was exported in bulk to the United Kingdom and later partly to India. It is symptomatic of the concentration of cotton production in the Eastern Province that in 1916 - 1917 there were 15 ginneries in that area, 7 in Buganda and one in the Northern Province[ii] and in the same year cotton markets were held in Buganda for the first time. A year later the number of ginneries is reported as 33 with 14 more in process of erection,[iii] and for the first time mention is made of the increasing importance of Indian merchants who were becoming the dominating factor in the cotton trade, handling much of the buying, storing and transport of the cotton crop. Transport was greatly assisted by the construction of a network of motorable roads in the Eastern

i. Thomas and Scott. Uganda. page 505.
ii. Colonial Reports. Annual. Uganda. 1916 - 1917.
iii. Colonial Reports. Annual. Uganda. 1917 - 1918.

Province where lack of steep gradients and the presence of murrum for surfacing rendered the task reasonably easy although the projects of the Public Works Department were hampered by the perpetual shortage of labour. In 1912 the Busoga Railway was opened joining Jinja with Namasagali on the Nile at the head of navigation on Lake Kioga; exports of cotton and other crops from Lango came by this route and were finally exported via Jinja. Road development in Buganda was less ambitious on account of the more difficult elephant grass country and the acute shortage of labour, and motorable roads were confined to those necessary for administrative purposes and served commercial areas only as a side line. In 1915 a short railway was constructed from Port Bell to Kampala linking the main commercial centre with water communications to the railhead at Kisumu.

During the whole period under review cotton cultivation, especially in the Eastern Province, tended to overshadow all other agricultural developments but at the same time other districts of the Protectorate were also undergoing change in agricultural production from subsistence - sometimes precarious, to the dependence on a more diversified economy which included at least one commercial crop, the production of which brought to the native participation in the new monetary economy, This gave to the workers the opportunity to purchase such luxuries as they might wish or could afford, and the ability, by financial profit, to store the results of successful cultivation in a manner unprecedented in these areas.

In Toro where beans were the staple of the Bakonjo wheat cultivation was undertaken in 1912, at a height of seven thousand feet in the wooded foothills of Ruwenzori in an area to the west of Fort Portal, the lower limit being fixed by the prevalence of rust disease at lower altitudes. Conditions in this area allow two crops a year (of which the autumn-sown one is the more important) and wheat was alternated with beans for two years, followed by a rotation which included maize, sweet potatoes and English potatoes. Land was plentiful and after three or four years cropping the plots were abandoned and a new area of forest felled and cleared.

Mount Elgon, standing as a bastion on the Eastern boundary of the Protectorate had, like Ruwenzori, its particular opportunities to offer for crop production. Here, the rich volcanic soils and a rainfall of approximately fifty inches per annum which includes a pronounced dry season were early utilised by the Bagishu who cultivated the deep valleys which seam the southern and western sides of Mount Elgon. Up to 1912 the Bagishu had no cash crop and, in order to obtain sufficient money to pay cash taxes, they were forced to move down into the plains to cultivate cotton, or to leave the district and obtain work as labourers in one of the estates. At this time arabica coffee of the Nyasaland type was introduced[i] into the area and development of the industry proceeded very slowly, probably due to lack of adequate European supervision. The area within which arabica coffee will

i. Tothill. Agriculture in Uganda. page,332.

flourish is limited, (mainly by considerations of altitude) to a strip about ten miles wide between 4,200 and 7,500feet. Unlike cotton, coffee is a permanent crop and particularly when it is associated with banana gardens the population tends to become anchored.

Taking stock at the end of this first period the agricultural trends can be easily picked out. The great and almost overwhelming importance of cotton as the main cash crop resulted in its establishment in the main vegetational and agricultural regions of the country. Beginning in the elephant grass area of Buganda and Busoga, cotton cultivation spread in small measure from that belt to Ankole, Toro and Eastern Bunyoro in the Western Province, and to Gulu and Chua in the Northern Province, but became increasingly concentrated in the Eastern Province and Lango by virtue of easier land and labour conditions. This lead was further strengthened by the concentration of improved road, rail and water communications in the Eastern Province by the establishment of cotton experimental stations at Kumi and Serere and by the introduction and enthusiastic acceptance of ploughing as an aid to cultivation in the level plains of the Kioga Basin. Trading centres grew up to deal with cotton marketing and ginning, for example Iganga and Mbale and although these stations were early populated by a predominance of Indians and Swahilis they began also to attract a native fringe whose employment was in the station but who retained an agricultural status by living on a small plot on the

outskirts of the townships. Apart from these main areas of the Protectorate where cotton was the accepted cash crop, other small areas presenting a different environment established different crops: for example, rice, in Bunyuli, in the swamps of the Kioga Basin; wheat, in the foothills of Ruwenzori and in the valleys of Mount Elgon arabica coffee. The outlying districts of Kigezi, West Nile, Karamoja and the pastoral lands of Ankole though widely different in location and agricultural potential yet were alike in their remoteness from the hub of development in Buganda, and up to 1920, they pursued their routine of self sufficiency almost untouched by the impact of Western Administration.

Although the concentration on stock-rearing in these more remote districts was negligible in comparison with the attention given by the authorities to the production of cash crops, the presence of pastoral tribes within the boundaries of the Protectorate and, in some areas, the demand for draught beasts ensured a measure of concern for the development of successful animal husbandry.

In 1912 the stock population was estimated as follows:[1]

Cattle.....758,700
Sheep.....864,000
Goats.....1,046,000

Of these the cattle were by far the most important, and were of two main types, the humped short-horned Zebu in the Eastern and Northern Provinces and the long-horned

1. Colonial Reports. Annual. No.743. Uganda. 1911 - 1912.

Ankole type found in the Western Province, most particularly, in the district from which the type takes its name. Both breeds were comparatively small in size which reduced their usefulness as working animals, and the general level of stock management was very low, the emphasis being on the size of the herd rather than on the quality of the beasts. Unfortunately the environment which offered large areas suitable for cotton cultivation also presented conditions most admirably suited to the harbouring and transmission of animal diseases and the somewhat slender resources of the Veterinary Department were devoted to the control and eradication of these diseases, almost to the exclusion of any other work. This circumstance explains why in 1920 and indeed in 1950 while cash crop production had forged ahead and made its mark on the economy of the country, animal husbandry had lagged far behind.

In 1911 it is reported[i] that exports (of cotton) would have been greater but for the outbreak of rinderpest along the main trade route of the Eastern Province and great attempts were made to try and stop the progress southwards of the disease, which, apparently, had entered the Protectorate from Kenya. It is difficult to estimate if this is the first introduction of rinderpest to Uganda but this seems extremely unlikely and it appears probable that rinderpest had been present on the borders of the Protectorate for some time. The incidence of this disease, which is passed on by direct transmission, resulted in

i. Colonial Reports. Annual. No.708. Uganda. 1910 - 1911.

very considerable mortality though strict quarantining, and later, the development of a serum for inoculation made it possible, in time, to limit outbreaks to restricted areas. Nevertheless, it has been widely held that the spread of the disease throughout large tracts of the territory can be attributed to the movement of infected game whose wanderings were much more difficult to control than those of domestic herds. The pre-occupation with rinderpest as the main cattle disease in these early years may have obscured the true situation in respect of animal trypanosomiasis but it is equally possible that, with only small areas of the country infested by tsetse flies the incidence of trypanosomiasis was not high. It was stated that[i] "Elsewhere (i.e. outside Kampala) in the Protectorate, with the exception of Buruli, in the north of the Buganda Province, trypanosomiasis (of cattle) has not caused serious loss." Some of the heaviest losses of cattle from trypanosomiasis unfortunately occurred in cattle inoculated against rinderpest,[ii] which thus retains its predominant position, losses being estimated in 1918-1919 as 30,000 head in Buganda alone.[iii] Both the tsetse borne trypanosomiasis and the tick borne east coast fever caused sporadic losses in various areas but attention at this stage was still focussed on the control of rinderpest epizootics almost to the exclusion of improved herd management, the castration of surplus bulls and the selection of stock for breeding.

i. Colonial Reports. Annual. Uganda. No.873. 1914 - 1915.
ii. Colonial Reports. Annual. Uganda. No.1054.1918 - 1919.
iii. Ibid.

In all stock areas the perpetual water shortage and the consequent crowding of herds around the few available water holes greatly increased the danger of infection and the subsequent spread of disease especially in bad seasons when severe loss of stock was due to the combination of their low resistance with more intense overcrowding. Further, this local overcrowding was bound to result in overgrazing with subsequent accelerated erosion and final destruction of the pastures. In no area and at no stage of development up to and indeed, beyond 1921, was there any suggestion of the practice of mixed farming: indeed, it may be said that in this period the gulf between agriculturalists and pastoralists became wider rather than narrower on account of the successful establishment of a cash crop economy on the one hand and on the other, the comparatively static position of pastoral farming where all available resources were put towards the control of disease. The uneven pace of development in the two fields was due largely to the great difficulty in controlling the stock environment in which problems of disease and water supply presented difficulties apparently intractable.

Neither the introduction of cash crops and the establishment of European plantations nor the attack on animal diseases seriously disrupted the subsistence economy of the native in any area, nor did it affect the major distribution of population, though the intense labour shortage tended to encourage slight movement from the less favoured fringes towards the areas of maximum production, particularly the elephant grass zone of Buganda. Within these areas the establishment of mission and trading

stations drew a small number of natives to settle in the immediate vicinity, not as landless urban dwellers but as cultivators. But these movements were negligible compared with the stabilizing effect of the introduction of cash crops which made almost every district more prosperous and its population more settled. During this period the tendency must have been towards an increased numerical population had it not been for the high death rates on account of famine and disease, but there seems no evidence that serious famines were in any way connected with the introduction of cash crops which nearly always resulted in an increase in land holding for production rather than in a substitution of economic crops for subsistence crops.

Skilled workers and financial resources were both in short supply during this period, particularly during the war years 1914 - 1918 and it was natural that agricultural production should be concentrated on economic crops and that little attention should have been paid to the improvement of native subsistence crops. Consequently, although the standard of living may have improved, the standard of nutrition did not and there can have been little alteration during these years of the chronic state of malnutrition reflected in both the quantity and quality of the population.

Part II.

1920 - 1939

In this second period the Protectorate was faced with new problems, the solution of which rested on a fuller understanding of the intimate relationships between man and his environment. These relationships are given added urgency in tropical lands where heavy thunder showers can strip unprotected soil cover in an afternoon, where much disease is rooted deep in the existent environment and where erratic rainfall may ruin crops and bring famine and misery to the population.

Up till 1920 the energies of the Protectorate were bent towards increased cotton production, with its wide ramifications into the spheres of cultivation, labour and transport while the insistent problems of disease, human and animal, claimed the remaining administrative and financial resources. The 1914 - 1918 war had revealed the inadequacy of labour and transport though it had not disrupted the agricultural economy; but in the years 1918 - 1919 the great wave of epidemic disease (mainly influenza) and the occurrence of widespread disastrous famines, earlier achievements were eclipsed and it was in a sober frame of mind that the Protectorate faced the next decade.

In 1920, for instance, Uganda suffered with the rest of the world from the current economic depression to such an extent that this period sounded the death knell to most

European plantation agriculturalists whose products were hard hit by the combination of low prices on the home markets, high shipping freights and increased rates on the Uganda railway. This limitation of European enterprise to a small, almost negligible field, cleared the way for continued native expansion and indicated the lines of development which were to be followed in the Protectorate right up to 1950.

The acceptance of this intention to concentrate on native production was sealed in 1920 by a loan of £1,000,000 from the Imperial Treasury to be used for the following purposes:-[1]

Improvement of transport and communications.
Development of cotton, forestry and natural resources.
Building and equipment of hospitals etc..
Swamp drainage and other measures for the eradication of malaria.
Campaign against epidemic diseases of livestock.
Provision of buildings for increased staff.
Reclamation of tsetse areas.

The order in which the items are set out probably indicates the degree of priority accorded to each by the Administration. The emphasis is on increased production (especially cotton) and on the control of disease, and the history of the period 1920 - 1939 reflects the degree of determination with which this programme was undertaken.

i. Colonial Reports. Annual. Uganda. No.1112. 1920.

Cotton remained the great economic crop despite considerable fluctuation in acreage sown, production and price. In 1921 exports of ginned cotton represented more than 83% of the entire outward trade of the Protectorate valued at £1,539,538;[i] in 1937 the percentage was 80.4% and the value had risen to £5,702,736.[ii]

That these figures do not indicate a steadily expanding industry, acreage and production increasing each year, is shown by the following figures:-[iii]

Year	Acreage (1,000's)	Crop (bales)
1921 - 1922	164	48,000
1922 - 1923	345	88,000
1923 - 1924	418	128,000
1924 - 1925	572	196,000
1925 - 1926	610	180,000
1926 - 1927	590	131,000
1927 - 1928	533	138,000
1928 - 1929	698	204,000
1929 - 1930	663	125,000
1930 - 1931	740	189,000
1931 - 1932	865	207,000
1932 - 1933	1,071	295,000
1933 - 1934	1,091	286,000
1934 - 1935	1,186	253,000
1935 - 1936	1,367	316,000
1936 - 1937	1,484	332,000
1937 - 1938	1,759	418,000

The setbacks were climatic and economic; the latter commanded greater attention as being more spectacular, but interest really lies in the climatic control which

i. Colonial Reports. Annual. Uganda. No. 1151. 1921.
ii. Colonial Reports. Annual. Uganda. No. 1860. 1937
iii. Tothill. Agriculture in Uganda. page.190.

will continue to be a major factor influencing the persistance of established economic crops and the introduction of new crops in an attempt to produce a more diversified economy.

The acreage sown under cotton is reported[1] to be low in 1921 and in 1922, affected by bad weather conditions and in the latter case, to some extent, by the difficulty in disposing profitably of the 1921 crop. In 1927 the rains failed during the planting season, thus giving a poor yield from the cotton sown and also threatening famine. 1928 was not much better, and though the acreage sown showed an increase, weather conditions were again unsatisfactory, causing a total failure of crops in some districts and considerable shortages in others. To correct the balance, the year 1929 gave the largest cotton crop ever marketed in the Protectorate thus causing great optimism - to be followed, alas, by disappointment when 1930 proved a bad year and disease and weather conditions resulted in a big reduction in production - and it was at this point that the fluctuating character of production being recognised a Reserve Fund was established to act as a safeguard against future financial difficulties in years when the value of the cotton crop fell below average. 1934 and 1938 also represented years when unfavourable weather conditions seriously affected the production of the crop and in consequence the prosperity of a large proportion of the population.

These temporary setbacks to increasing production

1. Colonial Reports. Annual. Uganda. No. 1151. 1921. and Uganda. No. 1182. 1922.

have been stressed to emphasise the dependence of the country on a crop which was extremely sensitive to variable weather conditions. None of these checks really halted the continued expansion of the industry nor reduced Protectorate dependence on it, and the cultivation of cotton by natives under the guidance and encouragement of Government made steady progress. Cotton lint and cotton seed exports represented over 83% value of the total exports of the Protectorate, so that cotton being almost entirely a native grown crop, the agricultural production of the Protectorate was preponderantly in the hands of the native cultivators; non-native agriculture centred mainly round the production of coffee, rubber, tea and sugar.[i]

Such was the pre-occupation with cotton that it became established in all areas in the Protectorate suited to its cultivation, extending from the more easily accessible elephant grass areas to the Kioga Basin and the Northern Provinces in line with the extension of adequate communication which of necessity placed a limitation on the economic zone for export of cotton seed. Expansion of the area under cotton reached its peak in 1937 when the acreage sown reached 1,736,900,[ii] a figure which has not been reached since. But in the same year (1937) reference is made at last to the difficulty of increasing the acreage further as the resting period in all areas was being seriously reduced. In the Annual Report[iii] it is stated

i. Colonial Reports. Annual. Uganda. No.1601. 1931
ii. Colonial Reports. Annual. Uganda. No.1860. 1937
iii. Ibid.

that:- "the increase has necessarily reduced the area of cultivable land which could previously be allowed to rest and recuperate for indefinite periods under old systems of cultivation. In more densely populated areas the stage has now been reached when the cultivable land surplus to the needs of the people is not sufficient for a portion to be rested for the necessary period. The old system of shifting cultivation is no longer suitable for these areas and soil deterioration has commenced."

These increased acreages, particularly in the Eastern Province were in part due to the increasing enthusiastic use of ploughs[1] for cultivation. The use of tractor ploughs in the Siroko valley attracted Bagishu from the hills down to the plain to partake in cotton cultivation. In 1923 new ploughing schools were established in Budama, Bugwere and Bugishu where 600 cattle and 250 natives were trained. Native-owned ploughs in the Eastern Province in 1926 numbered over 2,700 and the use of ploughs increased the size of cotton plots from approximately ¼ acre to 5 acres.

In the few areas not fit for cotton cultivation attempts were made to find suitable economic crops. Coffee was grown by natives, arabica in Bugishu and robusta particularly in Mengo and Masaka. Robusta is indigenous to Uganda but despite its fairly widespread occurrence, particularly in the forested areaa, this potential economic crop was neglected in favour of

i. Colonial Reports. Annual. Uganda. No.1220. 1923.

introduced arabica coffee which was preferred on account of its earlier cropping, larger bean and higher market value. The position in 1916 showed the reluctant admission[i] that arabica coffee would have to be restricted to areas of the Protectorate of sufficient elevation and with a pronounced dry spell, a condition necessary for good flowering. It had proved a risky crop in areas where climatic conditions were not suited to its cultivation. In the more humid parts of the Protectorate the life of the arabica coffee tree is very short, so that Coffea Robusta, which is indigenous, appeared to be more suited to native cultivation as its yield is both large and sure. On the other hand, arabica coffee remained restricted to areas of considerable altitude and small rainfall. In practice, arabica coffee has become established to a small extent as a native crop in Toro and Ankole and more particularly in the hill areas of Bugishu. In the latter area, as indicated in Part I of this chapter[ii] arabica coffee had been established in 1912 as the main economic crop, but progress had been slow and erratic, mainly because of the pre-occupation of the Agricultural Department with cotton, and the ever-present demand for labour for public works and estate development. In 1922 twelve Government nurseries were established in the area and there followed a period of comparatively rapid extension of the cropping acreage. Planting was actively encouraged but though the native cultivators were prepared to expend time and energy on the crop, the lack of adequate supervision was apparent in the somewhat inferior final product

i. Department of Agriculture. Annual Report. 1916.
ii. Chapter II. Part I. page.53.

which failed to command a good price in world markets.

Vigorous Government action in 1930 succeeded in rescuing this doubtful industry from slow deterioration and set it on its feet as one of the most successful schemes of native production. A full-time Agricultural Officer was posted to Bugishu, rigorous control of planting was enforced and the 'Bugishu Coffee Scheme' was established to arrange for the purchase of the crop, for its proper preparation and sale. As a result of this intensive campaign 6,000 acres were under cultivation in 1936 and the crop was estimated at 1,800 tons. This crop is grown on small plots, averaging about one third of an acre, located on the slopes of these upland valleys. Coffee has the advantage of being a perennial crop and affords much more protection to the soil than does cotton, but even so, where it is cultivated, as in Bugishu, on considerable slopes, there must be some danger of erosion and this was dealt with at an early stage by the use of banana trash mulch which serves to protect the rich volcanic soil from the effects of excessive erosion.

Concentration on arabica coffee obscured the potential importance of the native robusta until the 1920's but the very mode of occurrence of the latter should have been an indication of the part that the crop could play in diversifying an economy so heavily dependent on cotton. Where robusta occurs wild it is often abundant and locally dominant in the small-tree layer of the tropical forest and seems to require a light shade of some kind. There is early evidence of a considerable trade in coffee prior to

1900, probably mainly for chewing and much of the crop came from the forest areas of the Sesse Islands.

Gradually, as experiments with the higher priced arabica showed that it was suited only to limited areas of the Protectorate, attention was turned to robusta as a major economic crop of the elephant grass areas. Experience had shown that in areas below 4,500 ft. robusta, in spite of its low market value, was more profitable than arabica as yields are larger and it is comparatively free from pests and diseases.[i] The plant essentially belongs to the equatorial zone and flourishes under conditions which are fairly humid throughout the year; but it is affected by drought and does not crop well above 5,500 ft. These conditions restrict its cultivation to Mengo, Masaka, Bunyoro and Bwamba and there were, by 1929, 16,730 acres under native cultivation; where coffee and cotton come into competition, coffee tends to be favoured in the wetter districts and by its permanent nature and the fact that it requires little or no skilled work in pruning or other attention[ii] it is well suited to peasant cultivators and fits well into a plantain growing district where areas of cultivation are fixed. Coffee cultivation does not appear to draw on labour supplies but fixes population by supplying an economic crop. In pursuance of this policy of diversification of production the Government encouraged the establishment of two big sugar plantations and factories in the elephant grass zone at Lugazi (1925) and Kakira(1929). These concerns are in Indian hands but the labour is almost

i. Tothill. Agriculture in Uganda. page.293.
ii. Matheson and Bovill. East African Agriculture, page.230.

entirely native and is provided locally and by immigrant labour. Tobacco growing was encouraged in Bunyoro (1927) and later in the West Nile. Tobacco requires a fertile well drained soil with a fairly high clay content, the red earth usually produces a good leaf but low-lying wet soils are not suitable.

Thus the trend in crop production continued the fundamental dependence on cotton as the major crop though these various experiments in other economic crops indicates the Government's appreciation of the need to provide a cash crop in all areas of the Protectorate and to encourage alternative cash crops in the event of a failure of production or marketing of cotton. Little real attention appears to be paid to conservation of land and the emphasis remains on increased production from extended acreages.

The rapid increase in the development of the cotton industry, once clear of the post-war slump, gave rise to problems of maintenance of an adequate supply of labour and the provision of further transport facilities.[i] The provision of adequate communications and transport still to a considerable extent controlled the location of the main centres of production and in some years transport rather than actual production was the limiting factor in cotton exports. In 1921,[ii] of the 15,876 tons of goods handled by the Transport Section approximately 50% was

i. Colonial Reports. Annual. Uganda. No.1280. 1924.
ii. Colonial Reports. Annual. Uganda. No.1151. 1921.

handled by motor transport, a further 25% by carts and the remainder was fairly evenly divided between that put out to contract and that still carried by porters. In his tour of East Africa in 1907, Churchill observed, "Out of the range of steam the porter is the primary factor. This ragged figure, tottering along under his load, is the unit of locomotion and the limit of possibility." i. It is interesting to find as late as 1921 some 12% of official goods still being moved by human labour, but by 1924 no reference is made in transport figures to 'porters'. Certainly progress had been made in the years between, human porterage no longer set the limit of possibility but road-making itself demanded both supervision and labour and therefore came into direct competition with the demand for porters necessary to supplement motor and animal transport. It was estimated[ii] in 1920 that the Protectorate had approximately 600 miles of excellent roads fit for motors in all weathers, 800 miles of roads suitable for light motors and carts in the dry season and probably another thousand miles of good native tracks. This represents a considerable achievement; the roads were usually murrum surfaced and though liable to 'corrugation' if used for heavy traffic in the dry season were well kept by Public Works labour or by Native Administrations.

Although Protectorate transport depended on road-making and upkeep, extra-territorial trade had always been

i. Churchill. My African Journey. page.130.
ii. Colonial Reports. Annual. Uganda. No.1079. 1919 - 1920

dependent on the 'Uganda' Railway, stretching from Mombasa to Port Florence, the port from which Uganda's trade was carried by lake steamer to Port Bell or Jinja. In 1912 a railway line (known as the Busoga Railway)[i] was opened from Jinja to Namasagali; this ensured connection from the Lake Kioga Basin and the Albert Nile to Lake Victoria and the Uganda railway. Difficulties of capital and labour and the disruption of all plans by the war had prevented the logical extension of this railway and it was not till 1928 that the line from Mbulamuti (on the Busoga Railway) to the Kenya border was opened, thus allowing direct rail communication between Jinja and Mombasa. Just before this, in 1926, the whole railway system was put on a sound footing and Kenya and Uganda together were constituted joint owners of the railway. The question of transport had always been one of paramount importance in Uganda and it was a matter of great satisfaction that questions relating to the constitutional control of the Uganda Railways were settled definitely by an Order in Council.[ii] Work was put in hand immediately for the extension of the line from Jinja to Kampala (opened January 1931) and the first section of a branch line from Tororo to Soroti was opened in 1928 and completed in 1929.

The extension of the line from Kenya to Jinja allowed full advantage to be taken of the continually expanding cotton production but along with the growing

i. See Chapter II. Part I. page.52.
ii. Colonial Reports. Annual No.1377.Uganda. 1926.

prosperity a warning note was sounded:-"it is necessary to remember that prosperity is almost entirely dependent on the cotton crop and therefore that any set-back in cultivation or marketing would be reflected in the trade of the country."[i] The whole emphasis is on the external market conditions. The dangers foreseen consist of a falling-off of production, through lack of incentive, or, more possibly, a decrease in the world price following the 1925 'peak' year. Little attention was paid to the conditions of cultivation, or to the effect on land which had been under cotton cultivation for more than twenty years, and no forecast was made as to the optimum crop that could be expected from the land under conditions of peasant cultivation. It was the unwillingness to recognise these limitations by concentration on the successful marketing of the product that was characteristic of the 1930's.

Gradually the communication network became more complete and more reliable, easing the problems of intercourse between regions, spreading out from the central areas of Buganda and the Eastern Province a greater quantity and variety of consumer goods as incentives to increased production, and drawing to this main hub and especially to Buganda a steady drift of labour from the outlying districts of Uganda and the regions beyond.

Till 1920 the labour requirements of the Protectorate had been met, wholly or partially, from available local

i. Colonial Reports. Annual. Uganda. No.1318. 1925.

labour and, where necessary, from the labour supplied by chiefs under the kasanvu system.[i] Abolition of kasanvu in 1922 marked the inception of a much more vigorous policy for recruitment of labour; a sudden awakening to the vital role which labour has played in the full development of the Protectorate. Under systems of peasant cultivation, increased production, even on the small plots available, was made possible only by increased labour, labour which had to be supplied from an increasing population or by importing extra-regional workers either permanently or seasonally.

The full implications of the resulting movements are discussed in a later chapter;[ii] here it is only necessary to say that despite every effort by Government and by private enterprise labour remained scarce and this scarcity seriously affected progress in Buganda up till 1939. A Labour Department was set up in 1924 and was responsible for recruiting 22,944 labourers in 1925, mainly from West Nile and Lango and in increasing numbers from Ruanda Urundi. There were strong contrasts in the efficiency of this labour. That coming from the south west tended to be rated very low on account of conditions of poverty in the home areas, the long trek on foot to centres of employment, the low state of nutrition and resulting high incidence of disease. On the other hand, Northern Province labour was reasonably efficient, healthy and reliable and these people were preferred by European

i. See Chapter IV. page. 152.
ii. See Chapter IV. Labour and Migration.

undertakings while the Banyaruanda worked largely for Baganda cultivators. In both categories, however, movement at first was largely seasonal, it remained so in respect of the Northern Province contingents (mainly Alur and Lugbara) but, increasingly, the people from the south west region came to settle in the areas of employment, mainly Buganda, though some penetrated as far as Busoga in the Eastern Province.

Side by side with the great increase in the production and export of agricultural crops, dependent on peasant cultivation, adequate labour and transport facilities, the livestock industry of the Protectorate showed no such spectacular increase in production but remained dogged by disease. Rinderpest is reported as the great scourge in the immediate post-war years. In 1924, although outbreaks of rinderpest are reported from all areas of the Eastern Province[i] a serious outbreak of trypanosomiasis occurred in Toro, and in the West Nile fifteen thousand head of cattle were lost from the east coast fever;[ii] but it was still felt that despite a fairly widespread occurrence of trypanosomiasis it did not account for serious losses and indeed at one point it was considered that the fly belts, with this potential danger to cattle population, were actually decreasing.[iii] In this period the liability to famine conditions in many of the cattle areas increased the prevalence of disease, particularly rinderpest by the lack of adequate grazing and

i. Colonial Reports. Annual. Uganda. No.1280. 1924.
ii. Ibid.
iii. Colonial Reports. Annual. Uganda. No.1377. 1926.

water supplies, resulting in great concentrations of cattle in small areas. Further, there was the perpetual menace of infected herds of wild game as it seemed to be a rule that when a herd of buffalo became infected with rinderpest, they scattered and the stragglers tended to join up with healthy buffalo herds, thus disseminating infection over a wide area.[i]

Thus, the entire resources of the Veterinary Department were turned towards the control and eradication of the main cattle diseases. The European staff were hampered in this work by the primitive character of the methods of livestock keeping, methods which were based entirely on custom. However, tireless attempts were made to improve the native breeds. Owners were persuaded to submit indifferent males to castration; nearly fifty eight thousand head were treated during 1931[ii] and the steady reduction in scrub bulls began to show beneficial influence on the stock and on the meat supplies of the country. Stock were kept for hides and skins and for slaughter. The hide and skin trade suffered from the 'flat rate' system of buying which offered no encouragemant to natives to produce skins of good quality so that the emphasis was rather on quantity than on quality. The development of an internal trade in cattle was also hindered for some time by the continued prevalence of serious disease which made it necessary to close the stock routes converging on Kampala and Jinja from both the Western and Eastern

i. Colonial Reports. Annual. Uganda. No. 1439. 1928.
ii. Colonial Reports. Annual. Uganda. No. 1601. 1931.

Provinces. For example, Karamoja was closed for trading between 1919 and 1933 because of the presence of rinderpest and bovine pleuro-pneumonia, and trypanosomiasis constantly prevented movements of stock from one region to another.

By 1936 the combination of an ever-increasing consumption of meat by Africans and the maintenance of well controlled stock routes by constant vigilance in matters of disease had resulted in a steady increase in the movement of cattle from outlying areas to the marketing centres. This increased movement, though still liable to periodic interruptions on account of disease, had brought a new prosperity to cattle-owning tribes, which in its turn encouraged the improvement of herds and the production not only of slaughter cattle but of milk and ghee in areas adjacent to large centres of population. This new prosperity was apparent only in the last few years of the period and did not, in any way, alter the fundamental pattern of mode of life and distribution of population in the short grass cattle areas.

Some distinction is necessary between areas of very marginal climate in which cattle were absolutely predominant and the basis of food supply, such as Ankole and Karamoja, and the remainder of the short grass areas, particularly the Northern Province and the Kioga Basin where grain had been the subsistence crop and stock had been a measure of prestige. In these latter areas economic crops, particularly cotton, had been introduced and, in areas well provided with transport facilities, such as Teso, had

developed as a major cash crop though not at the expense of the stock population. The extraordinary prosperity of Teso, to which reference has been made elsewhere[1], may have been due to a diversified subsistence agriculture in which millets were supplemented by sweet potatoes, ground nuts and sim sim, to the production of cotton as a firmly established crop and to the possession of herds of increasingly productive cattle which could be marketed in the prosperous lakeside areas of Buganda and Busoga.

It is significant, however, that it was in Teso that problems of overgrazing and excessive soil erosion first became urgent as, with the extension of economic crops and the pressure on land by the increase in human and animal populations the resting period was shortened, and even during this short resting period the land was grazed during the wet season by stock moved up from the swamp grazings.

In the period between the two wars the keynote of development was continued use of the land by methods of peasant production. Cotton persisted as the main native economic crop and maintained its financial preponderance in exports despite the introduction and development of subsidiary crops such as coffee, sugar and tobacco. By its heavy drain on soils, demand for labour and need for adequate transport facilities as well as by the part it played in the increased prosperity of the Protectorate as a whole, cotton production must be regarded as the major feature of this period. The demands of increased cotton

i. Chapter II. Part I. page.46.

production were met at the expense of a considered policy of the balanced development of the resources of the Protectorate, but this was only dimly and intermittently appreciated at the time. Pressure on land, by extended cultivation and diminution of the resting period, was noticeable only in a few areas such as Teso and there was no apparent competition between economic and subsistence crops. This lack of land hunger and obvious loss of fertility postponed any consideration of improved methods of cultivation, of concerted efforts to improve communal grazings and of radical attempts to introduce true mixed farming and thus integrate and improve both agricultural land and stock production.

The very resources of the country and their successful utilisation up to 1939 served to camouflage the real problems of increased population, improved standards of living and the consequent demand for greatly increased production from the total environment and not merely from an extension of agricultural land under cotton cultivation.

Part III.

1939 - 1950

The outbreak of the war in 1939 marked the end of a period of exploitation of agricultural resources at the expense of all other considerations. Problems of malnutrition, labour inefficiency, pressure of population, wartime labour shortage, soil erosion, loss of fertility and decreasing yields and the inexorable spread of tsetse fly over large parts of the Protectorate forced the Administration to consider the development of the country as a long term measure based on a full realisation of the fundamental problems of increasing production in a tropical country, dependent hitherto on production from primitive methods of peasant cultivation.

That this attack could be made during wartime when staff shortages were acute and demands for increased output insistent, is a reflection of the urgency of the problem, of the stage in development of the Protectorate as affected by internal and external influences, and of the continued willingness of the Administration to maintain the prosperity of the country and increase the general standard of living. For example, whereas the Medical and Veterinary Departments formerly had struggled to maintain a status quo, by necessary emphasis on curative measures, from 1939 onwards the increasing appreciation which they gained of the fundamental unity of the environment in which they were working plus the vastly improved tools and techniques at their disposal, allowed

an attack to be made in the realm of preventive medicine.

Such preventive measures were bound up with improvement in general health and in particular of nutrition. Reference is made elsewhere[i] to the importance of adequate food supplies and of the effect of sub-nutrition and chronic malnutrition on the health and efficiency of the population. It is sufficient here to lay emphasis on the new importance given to the supply of native foodstuffs, both as regards quantity and quality. Experiments were carried out in order to increase yields and standards of grain crops, advice was given in respect of neglected banana gardens and new crops were introduced to give a more varied and balanced diet. Rural development was organised round a rational view of measures to be adopted to deal with soil conservation[ii] and the agricultural policy of the Protectorate aimed at self sufficiency in food production while maintaining the maximum production of cotton and coffee as export crops.

It had become evident that the fundamental basis of any policy of soil conservation was the restoration and preservation of the crumb structure of the soil as deterioration of structure was followed immediately by sheet erosion, which removes top soil and converts all rainfall to surface run-off thus reducing underground water supply and causing a drop in the water table. The most satisfactory method of preserving the crumb structure

i. Chapter III. Part II. page. 136 et seq.

ii. Department of Agriculture. Annual Report. July 1939 - June 1940.

is a three year period of resting under grass cover following three years of cultivation, very much the procedure followed in most areas before the introduction of economic crops. It can be assumed, therefore, that in this case customary methods were the result of experience in determining the balance of cropping years to years of fallow without any obvious loss of fertility. It was accepted[i] that maintenance and improvement of fertility of Uganda soils rested increasingly upon the firm foundation of a grass rotation and results indicated that no method of fallow or manuring could, as a practical proposition, compete with a period of years under certain grasses for the development of a structure in the soil capable of resisting erosion.

The increased claims on agricultural land following the introduction of cash crops cut down the resting period and in time destroyed the crumb structure of the soil and thus laid the land open to sheet erosion. It is obvious that the various soils of the Protectorate would respond to this treatment in different ways and further that the major crops grown in any particular area would tend to alter the rate of structure deterioration, both by the demands made on the soil and by the methods of cultivation.

In Teso, for example, the soils are lighter and less resistant to erosion than those of the elephant grass zone, in some measure as a result of lower and more erratic rainfall and a vegetation cover of short grass

i. Department of Agriculture. Annual Report. July 1944 - June 1945.

orchard bush. The country is gently rolling and was found to be most suitable for ploughing on account of its open nature and absence of heavy forest and it is significant to note that the areas where ploughing was first established were those where erosion had reached its extreme phase.[i] The clearing of original bush vegetation over considerable areas has laid open the land to dry season winds which cause excessive evaporation and carry away thousands of tons of soil.

On the other hand soils in the elephant grass zone are developed under conditions of well distributed rainfall and a cover of natural forest. As a result the soils are deep and well drained and will maintain their structure for some years under conditions of clearing and cultivation but even in this area structure will break down if the soil is not given protection and unless large cotton plots are avoided. It is a natural consequence of the environment that perennial crops such as plantains and coffee are prevalent in the elephant grass area, where, by the use of a mulch, soil deterioration can be avoided but, in the short grass areas with a pronounced dry season annual crops such as grains and cotton expose the lighter soils to all the dangers of excessive erosion.

It is thus obvious that the widespread cultivation of cotton, particularly in areas where ploughing has replaced hoe agriculture, must be responsible for the serious deterioration of soils in many parts of the

i. Tothill. Agriculture in Uganda. page.82.

Protectorate. Future production must be associated with attempts to check erosion in areas where it is already a major problem, as in Teso, and with a determination to increase the yield per acre rather than the acreage under cotton. In actual fact cotton acreage and production has never again reached the 1937 peak. In 1949 - 1950 the acreage was estimated at 1,628,000 and the crop at 342,279 bales.[i] This situation is due to the competition of other crops during the war years, to the extreme variability of weather right through this period and to the perceptible drop in yield from land long under cotton.

This is not to suggest that cotton suffered a serious reduction during and after the war; raw cotton exports were valued at £16,697,697 in 1950 out of domestic exports valued at £28,669,157[ii] and although this represents only approximately 59% instead of the former 83% the value is still very great. During the period there was a considerable increase in the area under cotton in Toro, due almost entirely to an improvement in communications which made the production of this economic crop worth while and incidentally stabilised a section of the growing population. On the other hand, lack of adequate communications affected the production in the Northern Province where it was reported[iii] that much of the cotton planted remained in the fields unpicked because of inefficient transport in many areas and peasants were seen carrying

i. Colonial Reports. [illegible]. Uganda. 1950. page.39.
ii. Ibid. page.38.
iii. Provincial Administration Reports. 1948. Northern Province.

head loads long distances. Further, lack of buildings and difficulty of obtaining sufficient labour resulted in storage and ginnery facilities being inadequate. By and large, it may be said that cotton cultivation was maintained at a high level in much of Buganda, the Eastern Province and the Kioga Basin and to a lesser extent in the Northern Province. Strip cropping was undertaken as an anti-erosion measure and became firmly established in the Eastern Province, especially Teso, and in Buganda, but methods of cultivation remained much the same, partly because increased mechanisation was not possible under present methods of land tenure and cropping practice and partly because mechanisation might have served to increase liability to erosion.

Wartime necessity was responsible for the introduction of three new economic crops, flax and high nicotine-content tobacco in Kigezi and flue-cured tobacco in West Nile. Tobacco was already an established crop in Bunyoro for the production of fire-cured leaf but the extension of its distribution brought a much needed cash crop to the remote areas of the Protectorate. This impetus to new crops was linked with a growing tendency to process locally-produced primary products instead of relying on export; the crops mainly concerned were soya beans, oilseeds, flax and tobacco.

Agricultural policy, therefore, while aiming at maintenance of cotton production was concerned with the diversity and quantity of other crops produced and increasingly attention was given to the introduction of mixed farming as a method of soil conservation, ~~to~~ increasing

the yield of crops and to the improvement of herds to meet the growing demand for meat from the comparatively rich areas of Buganda and Busoga which would introduce a much needed protein element into unbalanced carbohydrate diets. This linking together of supply and demand within the bounds of the Protectorate was an important step in the economic integration of the country.

It has been suggested[i] that the main concern of the Veterinary Department had been to struggle with the great burden of disease which threatened the stock population of the Protectorate, and by its ravages, prevented an increase in herd numbers and militated against the establishment of inter-district trade in cattle. During the period 1930 - 1939 the success of constant campaigns against disease and against the inferior standards of the herds had resulted in an increase in stock population and the slow establishment of accepted markets for slaughter stock from the various cattle districts. Despite this new trade the pastoral areas of the Protectorate were deemed to be over-stocked, largely on the basis of apparent over-grazing (in fact uncontrolled grazing) which showed signs of seriously reducing the pasture-lands of the country. Reference has already been made[ii] to the dangers of great concentrations of stock in dry years in respect of transmission of disease as well as of over-grazing and the fact that the important cattle areas are zones of unreliable rainfall stresses the utter dependence

i. Chapter II, Part I. page.58.
ii. Chapter II. Part II. page.75.

of man and stock on available water supplies, which inevitably controls the size of stock population which can be carried in any one year.

Relief of pressure on the land could be achieved, therefore, by the reduction of numbers of stock or by the provision of more frequent and more permanent water supplies. Propaganda, aimed at stock owners over a period of years, bore fruit from approximately 1935 onwards and, as the native owner came to a realisation of the cash value of his stock, the supply of slaughter beasts increased and stock pressure on the land was thus relieved. But the fact that the main areas of consumption (the lakeside areas and Kenya) lay outwith the areas of cattle production again emphasised the problems of transport and communications which, at an earlier stage, had influenced the location of the main areas of cotton production. The geographical features of Uganda are not conducive to the easy handling of a large and widespread livestock marketing system which entails the movement of many thousands of stock over hundreds of miles by land, by lake or by rail, to markets which demand not a regular, but a daily quota of cattle, to supply the needs of a hardworking industrial and commercial community.[i]

Cattle were kept in the purely pastoral areas of Ankole and Karamoja and also in the short grass regions of the Kioga Basin and the northern plains. Beasts

i. Veterinary Department. Annual Report. 1943.

moved great distances on the hoof lost condition very rapidly, suffering from great heat and inadequate feeding and this factor reduced the importance of Ankole as a potential source of slaughter cattle. Karamoja cattle for some time were diverted to Kenya via the railhead at Soroti; Teso cattle could either be exported to Jinja or Kampala via the railway or by lighter across Lake Kioga to the railhead at Namasagali, while Lango was in a much more difficult position, having to move stock across Lake Kioga into Buganda and hence by road to Kampala or via Bunyoro into Buganda, with the same disadvantage.

Despite these great difficulties in supply and transport, difficulties which were increased by the frequent closing of the stock routes by actual disease or the threat of infection, the demand continued to rise for a constant supply of meat, especially in the Kampala area. In response to this demand which could not be fully met from the stock rearing areas, a system of mixed farming was evolved with the full co-operation of the people.[i] Hitherto the system of cattle owning and management in Buganda had reflected the influence of Hima standards and habits in that Baganda owned herds of cattle and pastured them mainly on the margins of the elephant grass areas under Bahima herdsmen to whom they deferred in all matters affecting the stock. This system prevailed so long as cattle remained a mere badge of prestige but when it was recognised that cattle could become an economic asset of great importance Baganda owners became interested

i. Veterinary Department. Annual Report. 1943.

in the personal supervision of their own herds. Cattle were withdrawn from the outlying areas and housed and grazed near the homes of their owners. Where herds had been composite, for ease of maintenance under a single herdsman they were broken up into small herds of about twenty five head and the former herdsmen were kept on as servants of the cattle owners rather than as advisers as formerly.

The presence of small herds of cattle in areas of agricultural production provided the necessary facilities for the introduction of a system of mixed farming, considered so urgent for soil conservation. In the elephant grass areas natural pasture was absent and the permanency of crops such as plantains and coffee restricted the area which could be used for rotational grasses. Stall feeding appeared to be the easy solution and this was first tried in the Kampala area where store cattle were stall fed for a short time and, when slaughtered, gave a good profit and produced meat that was incomparably better than that from trade stock killed straight from the road. In addition, valuable supplies of kraal manure were available for the first peasant experiments in manuring land. It was found that though manuring did not, in actual fact, improve the structure of the soil it so increased the yield of crops that the land could yield the same amount in a much shorter period, thus extending the resting period without suffering a loss in production.

Further, cattle were fed on elephant grass to provide the bulky fraction of stall feeding; the grass was cut

rotationally every four months and, as a heavy application of kraal manure doubled the grass yield it was estimated that each acre of a manured plot produced the bulky content of the fattening ration for six beasts per annum.[i] Cattle kept in darkened byres and stall fed showed a great improvement over those allowed to range freely. In the byres smoke from dung fires appeared to provide an excellent fly repellent and thus protected the animals from stomoxys flies which are particularly numerous and active in the heat of the day. In addition to this improvement in the health and condition of the adult beasts, calves brought up in these conditions appeared to be much more healthy and calf mortality was low despite the presence of endemic east coast fever. (Estimates of 30% calf mortality from east coast fever were made for the whole Protectorate).[ii] This promising development was confined to Buganda where conditions favoured true mixed farming and where the proximity of markets for stock and agricultural products was an added impetus to better methods and to an increase in output.

Despite its success in areas hitherto devoid of cattle mixed farming did not develop in areas such as Teso, where agricultural development and animal husbandry existed side by side. Certainly, in many of these cattle areas, erosion had already damaged the pasture areas and the restricted water supplies, at least in part the cause of over-grazing, was one of the most important

i. Department of Agriculture. Annual Report. July 1943 - June 1944.

ii. Veterinary Department. Annual Report. 1947.

factors preventing the improvement of conditions. Gillman, in his survey of conditions in Tanganyika, doubts the advisability of trying to introduce methods of mixed farming into these somewhat marginal areas. He writes:- "The ideal, recently put forward and now being experimented with, to turn these people gradually into mixed farmers fixed on small permanent holdings, with cattle, not for cattle's sake, but for work, manure and food only, however desirable in principle, seems to me to leave out of consideration a fundamental geographical difference: for, surely it is risky to attempt planting a system evolved in the more humid parts of the world into the semi-arid tropical savannah except in a few suitable localities favourably situated with regard to permanent water as, e.g. along the shores of Lake Victoria."[i]

In both Mbale and Teso good results were obtained from closing certain areas, for periods ranging from one to three years. Reservation of eroded patches in the grazing grounds of the south Lango lake shore showed that unless erosion had proceeded too far a rest from grazing of one year is a sufficient period before grazing may be recommenced. On the other hand, with badly eroded land, grazing must be prohibited for some years.[ii]

Mean while the success of cattle marketing systems

i. C. Gillman. Problems of Land Utilisation in Tanganyika Territory. South African Geographical Journal. Volume XX 1938.

ii. Department of Agriculture. Annual Report, July 1944 - June 1945.

was so great that de-stocking no longer presented a problem and indeed the threatened position of over-stocking had changed, in a few years, to a threatened reduction in numbers so that in the main stock producing areas of Lango and Teso the export of immature and breeding stock had to be prohibited, thus accentuating the short supply of meat which existed throughout Buganda and other densely populated areas.

This shortage of cattle was due partly to severe over-selling but also to the continued loss by disease of a considerable proportion of the stock capital of the Protectorate. East coast fever persisted in levying very heavy toll on young calves and rinderpest continued as a constant source of anxiety. In neither case has it been possible as yet to institute measures of full control.[i]

By far the greatest menace to the future of livestock in Uganda is the continued spread of tsetse flies over large parts of the country.[ii] It is obvious that fly must have been increasing steadily though no real estimate of its importance was made until 1944 when it was reported that trypanosomiasis was taking heavy toll of cattle in many areas and that the recent spread of tsetse constituted a serious threat to the stock industry of the Protectorate.[iii] Just how serious was the position was only slowly realized

i. Veterinary Department. Annual Report. 1948.

ii. Map 12.

iii. Department Of Agriculture. Annual Report. July 1944 - June 1945.

despite the fact that the stock route from Lango and Teso through the Bugerere county of Buganda was closed in 1945 owing to the spread of tsetse, which had caused the loss of approximately eleven thousand head in the county in 1944.

The increasing hold which the fly established over large areas resulted, (1) in stock being decimated, (as in Bugerere); (2) in cattle being forced into inadequate areas, thus causing dangerous concentrations, and (3) where areas had been abandoned by cattle an increase in bush growth and a consequent increase in game, particularly buffalo, causing the final abandonment of land by agriculturalists. The annually increasing menace of tsetse and trypanosomiasis to the cattle population in Uganda, together with its effect upon economic and sociological problems, was strongly stressed.[i] Teso District was the only area in Uganda not infested to a greater or lesser degree by this scourge, and even this district was menaced by tsetse expansion towards its northern boundaries. It was estimated that at least half of the total area of the Protectorate was uninhabitable to cattle, and the whole livestock industry was threatened by tsetse encroachment upon the remaining cattle producing areas.

In 1945 it was estimated[ii] that more than one third of of the whole land area of the Protectorate, much of it

i. Report on Livestock Production in Uganda. page.29.
ii. Veterinary Department. Annual Report. 1945.

first rate grazing land, had been lost to cattle by the presence of tsetse. It must be emphasised that the indirect effects of a tsetse belt extend far beyond the limits of tsetse infestation, in that trypanosomiasis will occur amongst herds of cattle considerable distances from the original source of infection. The only effective barrier against tsetse[i] is the establishment of a permanently settled population, but inevitably this is dependent upon the provision of water supplies. This appears to be the crux of the matter. Close settlement is the one sure protection against the presence or spread of the fly, which accounts for its comparative absence in the densely peopled areas of the Protectorate.[ii] On the other hand, at the moment, settlement is only possible, particularly if cattle are involved, in areas which are fly free. This presents a really vicious circle; the steady retreat of men and beasts before the invasion of the fly merely reduces the land area available for production and gives the fly a greater hold over the region as a whole and brings the threat nearer th the remaining areas of settlement.

It is difficult to estimate the real effect on population distribution of this increase in fly infestation. Small, local movements most certainly took place, for example in Mitoma county of Ankole in 1945 when the evacuation of cattle caused immediate movement of herdsmen and the subsequent movement of agriculturalists. Again,

i. Tsetse Control Department. Annual Report. 1947.
ii. Map. 24.

in Karamoja by 1947 it was estimated[i] that nearly one half of the district was infested with tsetse fly causing a concentration of approximately 1,000,000 head of stock (sheep, cattle, goats and donkeys) in approximately 5,000 square miles of territory where again water supplies were inadequate and watering places few and far between. In no area has there been a movement of population in any way comparable to that from the lakeside zone in the sleeping sickness epidemic of 1902 - 1906 but despite the absence of spectacular movements the presence of tsetse remains possibly one of the most powerful influences affecting the present and future distribution of population.

A cheerful and somewhat novel view of the case was taken in 1946 by Sir John Hathorn Hall who writes;[ii] "The presence of this (tsetse) fly over more than one third of the land area of Uganda has been mentioned as a debit item on our economic balance sheet. I believe that it can and will be converted to an asset, for if we can find a means of countering the ravages of this fly we shall release to the cultivator and the herdsman that vast area of land which, owing to the presence of the fly, has lain fallow and has been enriched by the natural compost of ages." Here the land affected by fly is seen in the light of a 'closed' area set aside for regeneration of pasture, a reserve to be used for the expansion of the population as numbers and consequent pressure on land increase. The statement pre-supposes that a means of countering and controlling

i. Department of Agriculture. Annual Report. 1947.and Map24.

ii. A Development Plan for Uganda, 1946. Foreword by H. E. The Governor.

the fly will be found within a fairly short time, a hope as yet unfulfilled, but of much greater importance is its apparent neglect of the conception of a balanced development of the Protectorate which can hardly be achieved while a third of the country is in cold storage and while progressive pressure is placed on the remaining two thirds by an increasing population, who, in the absence of room for expansion, must learn to develop the available area to the full. It seems obvious that available resources will be concentrated on present areas of settlement and that the fly infested areas will be largely neglected unless they can be cleared and developed under a comprehensive plan. There is no sign of this despite a ten year development plan, and up till 1950 the general tendency was for a greater and greater concentration of population in the favoured fly-free areas and the relegation of the fly zones to a purely negative function.

But to revert to the function of settlement as a barrier against fly, this, as has been stressed, is dependent on the availability of water supplies. This applies to both agricultural and pastoral areas. A comparison of Maps 9 and 10 shows that on the whole the main elephant grass areas, the hill masses of Elgon and Ruwenzori and the West Nile highlands are regions of adequate water supply. Areas of 'difficulty' include much of the short grass area of Ankole and Acholi and its extension southward to the Teso area of the Kioga Basin, whereas Karamoja and the remainder of the Kioga Basin, are considered regions of 'extreme difficulty'. These

conditions are the result partly of climate factors (Map 7) and partly of topographic features. For example within the same climatic region, the Kioga peninsula of Lango, which presents low rolling country with very flat-topped hills underlain by shales offers practically no good bottle-neck sites for the construction of dams whereas Teso, with a much more pronounced topography of shell-backed ridges abounds in suitable dam sites. Water is supplied throughout the Protectorate either from boreholes or from reservoirs. Boreholes generally provide a lasting and comparatively disease-proof water supply but, particularly in areas where large herds require watering, reservoirs are more suitable, catching seasonal flow in water courses or concentrating rainfall in tanks.[i] Early use of open catchment structures in Masaka consisted of a simple rectangular structure with silt traps at one or both ends, taking water from channels which had been dug in slowly ascending fashion round the tops of the bare, shale hills. Water was also impounded in slight hollows in the ground or on excavated slopes by means of crescent shaped walls. The main emphasis has been on the construction of dams across valleys, and most of these reservoirs have a deep excavation just behind the dam which serves to supply material for the dam and is a means of retaining water even after a long spell of dry weather.

It is obvious that water supplied by this means is not always pure and that these reservoirs will be liable to silting and weed growth which will slowly reduce their

i. Bisset. Small Reservoirs in Uganda. 1945.

efficiency but despite these drawbacks this type of supply has had a marked effect in stabilising nomadic communities who previously had wandered in search of water in the dry season. On the other hand dam construction has to be restricted to areas with suitable topography though this requirement is met in most of the cattle areas, with the exception of much of Lango.

Over the rest of the Protectorate reliance is placed on boreholes and since 1940[i] a tremendous effort has been made to bring water supplies up to standard throughout the country; bores are grouped together as the provision of a new borehole means the attraction of permanent settlement to the area, settlement which may well increase with the result that its demands may outstrip the supply from a single borehole within the first few years.

Generally, Debenham in his review of Central and East African water resources[ii] considered that in comparison with the rest of East Africa, Uganda showed no real lack of water and presented no very urgent problems as to water development. Despite this relative dismissal of the problems of the Protectorate, he makes the statement that:- "Ultimate development of land in Uganda, omitting the north-eastern section, will depend on the control and regulation of its drainage."[iii] A somewhat similar estimate was made "No rise in the general standard of living of the

i. Bisset. Water-boring in Uganda. 1941.

ii. Debenham. Report on the Water Resources of the Bechuanaland Protectorate, Northern Rhodesia, the Nyasaland Protectorate, Tanganyika Territory, Kenya and the Uganda Protectorate. Colonial Research Publication.No.2. 1948.

iii. Ibid.

African can be achieved without a parallel improvement in water supplies."[i] but it seems that Debenham has touched the heart of the matter when he concentrates on drainage. One of the main features of the Protectorate is its indefinite drainage and the huge areas at present under swamps of various kinds are again negative areas; some of these swamp areas are used seasonally as pasture-lands, and, in respect of 'Basin Swamp' such as the Lake Kioga area Debenham suggests that these large swamps might become valuable reserves for future development of crop lands.[ii] This estimate is based on the realisation that draining should be possible by gravity, as there is a gradient in these central swamps of about 1:200.

It therefore appears that about half the area of the Protectorate is set aside under existent swamps or tsetse infestation. Though as potential for further development this area must assume very great importance it is at present 'negative' with reference to the distribution of population, population which, despite very considerable increase has, by force of circumstances, become consolidated in the 'positive'areas of the Protectorate. To very varying degrees these areas have offered opportunities for the development of fundamentally peasant production of both agricultural and pastoral products, and present population distribution is some reflection of this development. It should be emphasised that, however great the strides made

i. Summary of Progress of the Geological Survey of Uganda. 1929 - 1949.

ii. Debenham. Report on the Water Resources of the Bechuanaland Protectorate, Northern Rhodesia, the Nyasaland Protectorate, Tanganyika Territory, Kenya and the Uganda Protectorate. Colonial Research Publication. No.2. 1948.

in the last ten years they have been of degree rather than kind; the Protectorate only now stands on the brink of new experiments in industrialisation and a prophesy made at the beginning of the century remains a true indication of the character of the development of the country; "and even though mineral wealth may perhaps never lend its hectic glory to Uganda, the economic foundations of its prosperity will stand securely upon a rich and varied agriculture."[i]

No reference has been made in this chapter to the exploitation of the varied mineral resources of the Protectorate, for, despite the continual interest taken in these resources, they played a very minor part in general development and cannot be compared with the overwhelming pre-occupation with native production of cash crops from an area which remained self sufficient in all basic foods. The constant fluctuations of conditions of production and markets throughout the whole period cannot camouflage the upward trend of volume and value of cotton, coffee and a variety of less important agricultural products. This position has only been achieved by the most constant and tireless guidance of Government administrators and technicians without whose initiative and ceaseless care the peasant cultivator would never have attained his present standard of living. But the human factor can only be a part of the story. "Modern Uganda may be dated from Johnston's period of office, and its subsequent history is for the most part a record of social

i. Churchill. My African Journey. page.213.

and economic progress and of the adaptation and expansion of the machinery and responsibility of government to the service of this advance - "[i], and as the economic progress was the pre-requisite of the social it merits more searching investigation. Control of disease, variations in quantity and quality of population, movements of migrant labour and the utilisation of mineral, forestry, pastoral and agricultural resources of the country have rested on the potentialities of the land itself, and, in turn, have left their stamp upon that land.

Agricultural development[ii] in Uganda had taken the form of superimposing on traditional methods a system of cash crop economy and the modification of the accepted system of land use to make this possible. This policy proved to have limitations and led to soil ruination when coupled with comparatively large increases in human and stock populations.

The subsistence farmer and the nomadic pastoralist have gained a new security and perhaps a new location by increasing co-operation with the environment; by realising the present and future possibilities of the land not as a static background to their endeavours but as a dynamic element whose very appearance and attributes can be altered by the hand of man. At times this knowledge has been won hardly; the destruction of pasture revealed the

i. Thomas and Scott. Uganda. page.39.

ii. Department of Agriculture. Annual Report. 1947. See also Chapter VI. page.231.

dangers of over grazing, the reduction in crop yields pointed the way to soil conservation and apparent over-crowding raised the question of improved techniques.

At each stage the pattern of population density, distribution and composition was linked to production in its demands and results and the changes in population between 1900 and 1950 indicate the constant adjustments being made between man and his habitat. The intricate inter-relationships of geographical factors as seen in the environment are reflected in production and population, the whole presenting in 1950 a total environment - a "landschaft" - which differs subtly and fundamentally from that of 1900.

CHAPTER III.

ENVIRONMENT AND POPULATION

Part I.

DISEASE.

Uganda boasts practically every disease of man and cattle known to tropical and temperate climates, and many of these diseases exist under conditions rendering medical or veterinary control by conservative methods especially difficult.[i] Uganda offers an environment particularly suited to the continued existence and easy transmission of a great body of tropical diseases which, severally and together have been and still are the cause of considerable mortality and morbidity. The high incidence of disease is also affected by the almost permanent state of malnutrition existing in the bulk of the native population. Very naturally chronic malnutrition leads to a higher incidence of many diseases than would otherwise be the case and, although clinical states as a direct result of dietary deficiency are not by any means unknown, the main result of food deficiency in Uganda (from the medical point of view)[ii] is to be seen in the lack of resistance to disease and the development of complications which would not occur, or would occur only in a mild form, were a diet more rich in high-grade protein and fat normally consumed by the bulk of the population. Some of the

i. A Development Plan for Uganda. 1946. Foreword by H. E. The Governor.

ii. Medical Department. Annual Report. 1946.

causes of this malnutrition which results from unsuitable as well as inadequate food are treated elsewhere (ChapterIV.) Here it is necessary to draw attention to its results in increased susceptibility to disease.

Though there is no direct reference to malnutrition in early writings it can be assumed that malnutrition arising from dietary deficiency and not from famine conditions was as rife at the beginning of the century as in 1946 since the staple, whether plantains or grain, had remained the same. Obvious diseases with a very high mortality, such as sleeping sickness, necessarily secured the attention of the available medical personnel whose estimates of the situation were naturally quite overshadowed by direct contact with these diseases. In 1908[i] it was reported that there was considerable difficulty in making any estimate of the general health of the native population as the only yardstick available was the number of patients who presented themselves for treatment at the various medical posts and, for reasons of superstition as well as for actual distance, these were obviously only a small proportion of all those requiring treatment.

These early reports are full of references to a variety of diseases: sleeping sickness in these early years stands in a class by itself but in the Annual Report for 1908[ii] reference is made to 113 reported deaths from smallpox and to the prevalence of venereal disease.

i. Colonial Reports. Annual. Uganda. No.525. 1907 - 1908.
ii. Ibid.

This latter disease together with sleeping sickness is regarded as sufficient reason for the low birth rate (18.9 per 1,000 in Buganda). But apart from stray observations recorded during tours of survey the diseases most discussed in the early period are the insistent epidemic and endemic ones, including venereal disease.

It is significant to note the estimate of the authorities in the control and eradication of disease. Writing in 1935 Thomas and Scott state,[i] "The first stage in the raising of the standard of public health in Uganda may be regarded as completed. The diseases which in the past most seriously attacked the well-being of the native population - sleeping sickness, plague, and smallpox— have been brought under control." Of malaria it was stated, "Malaria is universal, and there is no part of the Protectorate where the disease may not be acquired, with the possible exceptions of a few townships. Strangely enough, the adult in his own village does not suffer much disability from this cause on account of the fact that he has developed an immunity."[ii] Yet in 1946 the Director of Medical Services writes on malaria[iii] "Its (malaria) effect upon the health of the native population is incalculable and the combination of chronic malaria and malnutrition probably accounts for more than a fourth of all sickness among the African population. By inducing a state of subnormal health, characterised by

i. Thomas and Scott. Uganda. page.311.
ii. Ibid. page.311.
iii. Medical Department. Annual Report. 1946.

lethargy and general lack of initiative, it sets up a vicious circle which, up to the present, has resisted all attempts to break it."

So the hopeful note struck in 1935 has changed to a more sober realisation that in a tropical country like Uganda where all conditions militate against control of disease the problem is associated not merely with curative measures but with the complicated ecological set-up in which bush clearing for the eradication of tsetse flies results in accelerated soil erosion, and where clearing of breeding areas for malaria control affects water supply. On the other hand relapsing fever appears to be carried largely by immigrant labour, which is essential to the productive capacity of the Protectorate, while plague is centred endemically in cotton producing districts and venereal disease has spread (and is still spreading) through the country as a function of the fuller integration of the various districts into an economic whole.

Therefore, the fundamental problem facing medical authorities in the period under review has been the control of the environment, for most of the serious diseases affecting the native population of Uganda are insect or animal borne, and control as opposed to cure has had to be concentrated on checking the vector of the disease by destruction of the environment suited to its breeding. It is the two-fold task of prevention and cure which has laid such a heavy burden on the Government Medical Department and the various Missionary Societies operating in Uganda, faced as they have been by a native

population clamouring for quick cures, who were unable to appreciate that with very limited qualified personnel and supplies a pre-occupation with curative measures in the long run must retard the control measures necessary for the prevention of specific diseases. Much information has been accumulated by experience and research regarding mode of transmission and the character of diseases which, together with the great general advance in medical science, has opened up new methods of control and cure. These have already borne fruit in the drop in incidence of specific diseases and even more particularly in the reduction in the number of reported deaths. While progress in the control of insect borne diseases has been slow, smallpox which is passed on by direct transmission and which formerly was such a scourge that over 1,000 deaths were reported in 1911[1] has been susceptible to control by vaccination with the result that the figures since 1928 show very few deaths in any year.

Malaria, plague, sleeping sickness, relapsing fever, dysentery and the various helminthic diseases are, with the addition of cerebro-spinal meningitis and venereal diseases the most serious disorders prevalent in the Protectorate though they have varied in their importance during the last half century. As indicated above the first group are restricted in their incidence by the conditions necessary for the breeding of the various vectors. In the case of malaria whose vector, the mosquito, requires an environment with standing water,

i. Colonial Reports. Annual. Uganda. 1911-1912.

this, by the very nature of the plateau-like form of the country with its huge areas of open water and swamps can be found in every district of the Protectorate and malaria is correspondingly widespread in its incidence. Flea-borne plague on the other hand appears to be mainly confined to the cotton producing areas as stocks of cotton seed form admirable rat-attracting material.

Any attempt to estimate the effect of disease on population change and distribution is complicated by the lack of adequate statistics for any or all of the main diseases. In many cases, particularly in the early years, the number of reported deaths is unlikely to represent the actual number. Normally the reported number can be regarded as a proportion of the total but in some epidemics it is possible that estimates given actually exaggerate the casualties. In some cases there is a cross check in a report giving an opinion on the reliability of the figures, but this type of check is not always available nor, when present, can it be regarded as necessarily reliable. Figures pertaining to the incidence of diseases can be regarded normally as even less reliable than those of deaths and here again it is necessary to calculate the effect on a population from all the sources available rather than by reliance on published figures alone.

From 1900 - 1906 the attention of the authorities was directed almost solely to the devastating epidemic of sleeping sickness which swept through the west and north shores of Lake Victoria resulting in deaths variously

T A B L E III.

Sleeping Sickness

Reported Deaths

Kingdom of Buganda[i]		Protectorate (selected years)[ii]	
1900	8,430	1906	6,522
1901	10,384	1907	4,175
1902	24,035	1908	3,662
1903	30,441	1909	1,782
1904	11,251	1910	1,546
1905	8,003	1911	1,487
Total	92,544	1912	932
		1920	69
		1941	44
		1942	209
		1948	2
		1949	6

i. Colonial Reports. Annual. Uganda. 1905 - 1906.

ii. Colonial Annual Reports and Medical Department Reports.

estimated at 200,000[i] or 300,000[ii] in this period. (See Table III). The disease appeared to resist all treatment and was universally fatal and, believing it to be an infectious or contagious type, the authorities first suggested that victims should be segregated on the island of Buvu in the Sesse group. This lack of knowledge of the character and mode of transmission of the disease was bound to result in almost one hundred per cent mortality but, as the problem was of such magnitude the Royal Society sent out two commissions, one in 1902 (Drs. Low, Castellani and Christy) and another in 1903 (Colonel Bruce) with the result that Bruce decided that the disease must be due to a trypanosome conveyed by Glossina palpalis, a species of tsetse fly.

This discovery, though a great step forward, raised the perennial question in the Protectorate, that control of the disease could be regarded as control of the fly, the object being to break the fly-man-fly cycle by destroying the natural habitat of the fly. Glossina palpalis is dependent on the presence of water, shade and suitable soil for breeding and therefore is present along lake shores and water-ways where those conditions are present, conditions apparently confined to areas within a few hundred yards of the water.

The glossina palpalis fly belt apparently extended

i. Report on the Measures Adopted for the Suppression of Sleeping Sickness in Uganda. Command.4990.1909.page'8.

ii. Churchill. My African Journey. page.98.

a mile or two from Lake Victoria and clearing appeared the only control measure possible, but in view of the fact that much of the northern shore of the lake was densely forested (Map 9) this proved impractical. The bulk of the interior of the Protectorate was considered to be fly-free at that time and therefore suitable for the reception of the lake-shore people. By 1903 the lake shores were fast becoming depopulated and whole villages were completely exterminated and tracts in Busoga, which had formerly been famed for their high state of cultivation, relapsed into scrub and forest.[i] This depopulation was due partly to the very heavy mortality (Table III) and partly to the policy of eviction pursued by the Government who paid a sum of approximately 4/- to 6/- to the head of each evicted family. The figure of £1,500 is given as expenditure on this project[ii] which, at 5/- per head, represents the movement of 60,000 families, who were settled mainly on vacant lands in Kyagwe. By the end of 1907 the whole prohibited zone in Buganda, from the German border to the Ripon Falls had been completely evacuated, an area which, according to Johnston, supported a population of 60 to over 100 per square mile in 1900.[iii] In addition to this evacuation the natives of Sesse and Buvuma were forbidden to approach the mainland except at a few authorised landing places, and fishing was prohibited.

During 1908 the evacuation of the lake-shore inhabitants of Busoga was completed and a two mile strip cleared

i. Report on the Measures Adopted for the Supression of Sleeping Sickness in Uganda. Command.4990.1909.

ii. Ibid.

iii. Map 14.

on either side of the Victoria Nile. The exception to this wholesale evacuation were the townships of Entebbe, Port Bell and Jinja where clearing was carried out and the cleared areas planted with citronella and lemon grass which had the advantage of covering the ground quickly and requiring no weeding.

In 1908 sleeping sickness was reported from the Northern and Western Provinces; in Bunyoro evacuation took place, the population of Bugungu being settled on an unoccupied strip of fertile country in the middle of Bunyoro, and in the Northern Province a strip fifteen miles wide along the east bank of the Nile was declared an infected area under the sleeping sickness Ordinance of 1908. In the same year it was decided to remove the remaining 20,000 inhabitants on Buvuma and Sesse and suitable locations for the settlement of this population were found in mainland areas of Buganda. In the year 1912 - 1913 the number of reported deaths dropped to 932 and the epidemic was at an end; success being mainly due to the strict policy of evacuation.

As a result of this epidemic approximately 221,000 persons are reported to have died between 1900 and 1914 (see Table III) out of a population estimated at 2,889,561 in 1913[1] while the remainder in the infected areas were displaced from the lake shores and islands to the interior. Re-population of these evacuated areas was delayed for some time because of the justifiable caution

1. Colonial Office List. 1914.

of the medical authorities, who stated that :- "Sleeping sickness, though its prevalence has enormously diminished, is, in the absence of a cure, and with the continued presence of the carrier in the infected areas, only held at bay by our present measures, and the strictest precaution should therefore be used in relaxing existing regulations in regard to it."[i] By 1920 re-settlement had begun and the Sesse Islands, for example, which had a population estimated at 20,000 in 1900 by 1935 this had been reduced to about 4,000.[ii]

The accepted principle of control had been established during this devastating epidemic and this, coupled with the deadly nature of the disease, for which there was no specific cure, made the authorities very vigilant in all matters concerning sleeping sickness. An added complication was the long period of incubation which allowed an infected person to travel long distances before the disease reached a recognisable stage, by which time the infection had probably been widely spread. This difficulty was especially important in connection with population movements into the Protectorate from the Belgian Congo, Ruanda Urundi and Tanganyika Territory. In all these areas sleeping sickness was endemic and thus the influx of ill-nourished, disease-ridden labour from the south west was a constant source of danger. This danger has increased to some extent with the greatly increased

i. Medical Department. Annual Report. 1912. page.8.
ii. Thomas and Scott. Uganda. page.430.

spread of tsetse flies. The early epidemic appeared to be confined to glossina palpalis as a vector and the somewhat specialized habitat and limited range of this fly confined the outbreak to a narrow fringe along the lake shores and perennial water courses. The increase in tsetse appears to have been largely that of glossina morsitans and pallidipes which are both less restricted in their incidence and although both require a certain amount of shade for successful breeding, they are often found (unlike glossina palpalis), at considerable distance from water. This suggests that there are few areas of Uganda suitable for human occupancy, which are not inherently suitable for occupation by some species of tsetse. By 1946, considerably more than one third of the whole land area of Uganda was affected by the presence of tsetsefly, which led to the depopulation of vast areas. Moreover, the tsetse fly appeared to be advancing at the rate of five miles a year on a broad front.[1]

Attention has been drawn already to the effect of tsetse infestation on the productive capacity of the land, in connection with the livestock industry and more indirectly, in connection with population movements following the advance or retreat of the fly belts. That less is heard of human sleeping sickness and its danger to the population is due to the control measures which have been in force since the 1900 - 1906 Lake Victoria epidemic and its subsequent extension to the shores of Lake Albert and

1. A Development Plan for Uganda. 1946. Foreword by H. E. The Governor. page.iii.

the banks of the Albert Nile. Again and again during the period reference is made to the fact that sleeping sickness is only kept in check by the strictest control measures with the gratifying result that for a period reported cases dwindled to an almost negligible quantity.[i]

Slowly, the main focus of infection was cut down to the West Nile and neighbouring areas of Acholi and, to a much smaller extent, to areas round Lake George and Lake Edward in the Western Province: these areas, which have long been negative with referance to population are shown in Map 11. In 1932, 536 cases of sleeping sickness were reported of which 378 were in the Northern Province and, of these, 317 in the West Nile area, mainly the Koich River area in West Madi. Arrangements for dealing with this area are indicative of the problems, medical and administrative, which face the medical authorities in their constant fight against this potential scourge. According to the Medical Department Annual Report (1937)[ii] "The area, which is now most affected is not the same as last year(1936), indeed the Koich valley which in 1936 was a serious source of worry, has been largely depopulated owing to the gradual voluntary movement of people southward. This has introduced a new difficulty because, around the large clearings made on the Koich River for the protection of those crossing it, there is at the present time so small a number of inhabitants

i. Colonial Reports. Annual. Uganda. 1915 - 1916, 1916 - 1917, 1919 - 1920.

ii. Medical Department. Annual Report. 1937. page.10.

as to be insufficient to maintain the clearings, and it seems probable that some concentration of the population will be necessary to protect it from the tsetse fly. Again, the movement of people into new areas has increased the incidence of trypanosomiasis in these parts, either from infections acquired on the Koich River but undetected until arrival in the new area, or from infections acquired on the rivers in the newly settled country." [i]

With such widespread distribution of tsetse, sleeping sickness must present a constant potential danger to the population of nearly all districts in the Protectorate. The ease with which this potential danger can be converted into an actual is shown by the recent 1940 - 1943 epidemic, which mainly affected Busoga. In all, 2,432 cases were reported with 274 deaths[ii] and this despite the most rigid measures of control and a special allocation of Medical Department staff to the affected areas.

At first this outbreak was attributed to the 'clandestine visits of Kavirondo fishermen'[iii] but the fact that the infection turned out to be trypanosomiasis rhodesiense and not trypanosomiasis gambiense which had been responsible for the previous epidemic, focussed attention on immigrant labour from the South West as the more likely source of infection.[iv] During recent years this labour has penetrated well into Busoga, to work on the sugar estate at Kakira, or

i. Medical Department. Annual Report. 1937. p 10
ii. Medical Department. Annual Report. 1946.
iii. Legislative Council. December 1941. page.44.
iv. Medical Department. Annual Report. 1946.

in the native owned cotton fields[1] and though the labour has been vital to expanding production in the Eastern Province the dangers inherent in the free movement of immigrant workers are very great. Consideration is given in the following chapter to the measure of control imposed on this labour, principally from the point of view of public health, but as strict control resulted in reduction in numbers, which the country as a whole could ill afford, the danger of infection had to be accepted as an inevitable risk.

Throughout the period, therefore, sleeping sickness has been present in the country and though no spectacular epidemic need be feared comparable with that of 1900 - 1906 yet the essentially environmental control of the disease ensures that it should be a constant menace, restricting movements of population, taking up the valuable time of administrative and public health officers and at times taking a severe toll of sections of the population. It appears that, apart from actual mortality in endemic and epidemic areas, sleeping sickness has a considerable effect on the general health, and, in females, on the fertility of those who are affected by it. Contributory causes in the incidence of sleeping sickness certainly include the increased mobility of the population, whether by choice or necessity and the dependence of the Protectorate on labour which by virtue of its place of origin constituted

i. Chapter IV. Labour and Migration.

a perpetual menace to the health of the indigenous population.

Like sleeping sickness, malaria is a vector-borne disease and the problems of environmental control, in this case of the mosquito, pose many of the difficulties encountered in the case of the former disease. But whereas sleeping sickness is to some extent restricted by the distribution of the three main species of tsetse, malarial mosquitoes find conditions suitable for their breeding in every part of the Protectorate and malaria is correspondingly widespread. Unlike sleeping sickness it was present in the country before 1900 and the familiar nature of the infection and its comparatively low demonstrable death rate served to detract from the seriousness of the position and, together with the problems of environmental control, have delayed full scale action against this all-important cause of high morbidity.

Malaria, in many parts of the Protectorate, is of seasonal occurrence and in others shows seasonal fluctuations in number and severity of cases. The very nature of the country, great plateau surfaces in the hollows of which rainwater can collect and lie in stagnant pools till it disappears by slow percolation and evaporation, large depressions containing permanent swamps, the great lake areas and perennial streams themselves often bounded by swamp areas and the seasonal water courses which dry up to a series of mosquito infested muddy puddles; all these provide a background to widespread and persistent malaria, occurring mainly in the wet season in the plateau and

fringe swamp areas and in the dry season in the neighbourhood of the bigger seasonal streams such as the Aswa.

It is very difficult to make any reasonably accurate estimates of the number of cases of malaria in any one year. Even if the figures from Government hospitals are taken this would represent a very small fraction of the total incidence and in any case would refer only to cases reported as malaria which were admitted to hospital or seen at dispensaries. In actual fact, most cases reported for other diseases and were accordingly registered as such; the fact that the patients were suffering from a series of intercurrent diseases among which malaria and some intestinal disease were almost bound to be numbered never finds its way into official records. One statement on the seriousness of the malaria position has been quoted earlier in this chapter;[i] in 1944 the Medical Report[ii] carried a warning that malaria was certainly the most serious disease for it occurred throughout the country and directly and indirectly took a greater toll of life from both indigenous and non-indigenous sections of the population. This appears to be a fair estimate of the position at any point during the half century under review though fluctuations occurred by virtue of weather conditions or the general state of health and nutrition.

The methods of malaria control have centred round the restriction of mosquito breeding areas, the prevention

i. Chapter III. page.104.
ii.Report on Post-War Development of Medical Services.1944.

of mosquito access to the population and the use of prophylactic and curative drugs. With regard to this last measure, quinine was used until 1939 and has been followed by the new anti-malarial drugs such as mepacrine and paludrine. Even where these can be distributed widely and used carefully they do not necessarily give full protection against all types of East African malaria and up to date they have not proved a substitute for environmental controls. Protection of the population, other than by medical action has been by the use of mosquito netting in house construction but, by virtue of social habits and of financial considerations such methods are mainly confined to the non-native population.

Interest is focussed, therefore, in the measures taken to control or eliminate the breeding of mosquitoes in standing water, whether swamps, lakes or rivers. In township areas, on which control measures have largely been centred, draining has been achieved by the construction of permanent concrete drains, whose gradient is sufficient to prevent water becoming stagnant and which can be easily cleaned, or oiled, when necessary. On the whole, these measures have been reasonably successful and most of the bigger townships are now regarded as malaria-free. In 1944[1], however, malaria appeared in epidemic form and township areas were affected even though protected by permanent drainage and routine oiling. The epidemic was fostered apparently by unusual rains; small showers at frequent intervals with no heavy downpours created

1. Medical Department. Annual Report. 1944.

conditions suitable for the breeding of a mass of anopheles gambiae. This suggests that even the most careful measures can be insufficient for protection where the habitat presents conditions so suitable for mosquito breeding, even though these extreme conditions may occur only sporadically.

Outwith the townships, control has had to be by more simple measures as neither labour, nor materials, nor money have been available for the construction and upkeep of permanent anti-malarial works. One of the most common methods of control has been the planting of gum trees in swamps with the double intention of taking up swamp water and of providing suitable fuel for the district as most areas are desperately short of domestic fuel. In view of this widespread measure, it is interesting to note the forthright remarks on the system by the Conservator of Forests. He maintains[1] that though anti-malarial planting has as its intention the drying up of swamps to make the breeding of mosquitoes impossible, the first result of afforestation, before drains and trees are functioning properly is a marked increase in the number of mosquitoes. Certainly this phase passes gradually as the swamp dries but successful management of such plantations is very difficult and rarely economic as the gum trees by themselves cannot dry up the swamps but must be assisted by drains which are liable to become obstructed by the roots of trees. Further, as the swamp dries termites move in

1. W. J. Eggeling. A review of some Vegetational Studies in Uganda. Uganda Journal. 1948. Volume 12. No.2.

and attack the gums which then have to be replaced by cassia, which seldom yields a marketable product and fails to suppress the grass undergrowth which is thus a constant fire danger. In conclusion the Conservator recommends that despite the heavy initial expense permanent drainage schemes should be laid down in preference to gum planting.

This considered opinion is a sad blow to those, who for years have seen in swamp planting the control and use of the habitat to man's advantage. The more careful study of the progress of a swamp dealt with in this way indicates that there is no such easy solution and that interference, such as drainage, can bring termite destruction in its path. Nevertheless, it is likely, that on the grounds of capital expenditure alone swamp drainage will continue to be attempted by planting rather than by permanent works though, as suggested above, this may lead initially to increased mosquito breeding and consequent heavier malaria incidence.

In other instances development itself has increased rather than diminished the risk of malaria infection. In 1944 malaria was reported[1] from a number of highland areas in Kigezi which had previously been considered free of the disease. Investigation proved that the cases were occurring in the vicinity of swamps which had been partly drained and cultivated to produce increased crops of sweet potatoes. In view of the suggestions put forward for the draining of swamps with a view to increased

1. Medical Department. Annual Report. 1944.

cultivation this is a matter which merits serious consideration and there is additional evidence from the rice areas of the Lake Kioga fringe which also appear to be a prolific source of infection. Here again man's attempted control of the environment proves to be a complicated matter and utilisation of these swamps will be affected, not merely by the desire for increased production made possible by modern engineering feats, but must take into consideration the whole field of actual and potential disease.

Two more examples of 'man-made' malaria are given as illustrations of the problems of control, The extension of urban conditions beyond the boundaries of townships and hence beyond the limits of frequent inspection are a most prolific source of infection; the presence of borrow pits dug in the making of roads and houses, or for brick construction, together with the crowding together of large numbers of people under very insanitary conditions favour the rapid spread of infections. On quite a different plane the extension of the great runway at Entebbe airport provided a good example of the need to co-ordinate construction works and public health. It was found that discharge of water from the great impermeable surface of the runway on to inadequately levelled and undrained surrounds of clay from which the top-soil had been removed, produced ideal conditions for mosquito breeding. A serious outbreak of malaria was only avoided by the scarcity of African population in the surrounding region but the potential danger of the

TABLE IV.

Plague

Reported Deaths[1]

Year	Deaths	Year	Deaths
1910	3,623	1927	1,863
1911	3,734	1928	1,174
1912	3,100	1929	5,118
1913	3,292	1930	2,370
1914	3,725	1931	2,299
1915	4,028	1932	990
1916	4,384	1933	833
1917	4,031	1934	937
1918	2,493	1935	1,871
1919	1,022	1936	929
1920	1,732	1937	478
1921	5,871	1938	376
1922	1,305	1939	308
1923	914	1940	268
1924	810	1942	213
1925	869	1943	-
1926	1,589		

i. Figures from Medical Reports. 1925 - 1944.

situation was fully realised.[i]

Plague was much more restricted in its distribution than malaria and more spectacular in its recorded deaths.[ii] Plague appears to have a periodic incidence and the spectacular drop in recorded deaths from 338 in 1942 to 7 in 1944 and none at all since 1947 may be due to a periodic recession or possibly to a real drop in incidence. Plague appeared in the Protectorate in 1906,[iii] and has been closely connected with the cotton industry. The disease was at first localised in the cotton districts of the Eastern Province where the storage of seed-cotton gave rats a good headquarters and where the gathering of natives at cotton markets greatly assisted the spread of infection. By 1911 - 1912 infection had spread to Buganda and by 1914 - 1915 to Lango though strict preventive measures kept the number of reported deaths fairly steady. 1921 and 1929 saw severe outbreaks almost entirely in the Eastern Province and Buganda. The general position is covered by the 1937 Medical Report, which suggested that plague was undergoing its periodic fall in incidence and that the decrease in the number of cases was not attributable to any real improvement in plague control, for as was again and again pointed out in medical reports,[iv] control will only become effective when the African builds for himself a house which contains no real harbourage for

i. Medical Department. Annual Report. 1951. page.18.
ii. Table IV.
iii. Thomas and Scott. Uganda.page.309.
iv. Medical Department. Annual Report. 1937.

T A B L E V.

Relapsing Fever (tick borne)

Cases treated at hospitals

	1943	1944	1945	1946	1947
Mbarara (Ankole)	52	723	835	892	343
Masaka) (Buganda)	183	236	281	381	167
Mulago) (Buganda)	70	51	76	25	50
Fort Portal (Toro)	14	31	33	21	27
Kabale (Kigezi)	57	37	43	24	39
Others	39	74	89	27	28
Total Cases	1,125	1,152	1,357	1,370	664

Cases Reported

	1949	1950
Western Province		
Ankole	327	393
Kigezi	18	40
Toro	24	43
Bunyoro	2	5
Buganda		
Masaka	105	170
Mengo	50	70
Mubende	2	3
Eastern Province		
Busoga	33	1
Others	5	2
Total Cases	566	727
Admitted to Hospital	346	301
Deaths	346	12

rats, and adopts habits of food storage and refuse disposal which deprive the rodent of food.

In other words, the control of plague must depend on health education and increased financial prosperity which will encourage and allow the African to construct a dwelling of this standard. Nevertheless by 1944 the steady decrease in the number of cases of plague had continued, only seven cases, all from Mengo district, being reported. The mortality rate was a hundred per cent. While it is true to say that improved housing conditions tended to reduce the rat population in living quarters, progress in this direction could not be claimed as wholly accountable for the steady decline in the incidence of the disease.[i] Whatever the cause no case has occurred in the Protectorate since 1947.

Tick-borne relapsing fever (see Table V.) had increased during the period from insignificance to one of the major problems[ii] by 1943. It is a disease which has been intimately connected with the movement of immigrant labour from the southwest for relapsing fever is common in Ruanda Urundi and the ticks carried into Uganda inhabit mud walls and old grass huts which the labourers use as temporary shelters along the road. Appreciation of the full scale of the problem dawned very slowly and any improvement in reported cases was hailed as an indication

i. Medical Department. Annual Report. 1944.
ii. Medical Department. Annual Report. 1943.

of successful medical control. For example, in 1914[i] it was recorded that the number of admissions of cases of relapsing fever to Government hospitals was showing a steady decline and as it was realised even then that the disease was especially common at wayside camps and markets it was considered that the decrease was due probably to the increase in mechanical transport which was replacing porterage on many of the main routes. Doubtless this was true at the time, but though improved methods of transport kept down the numbers the danger of infection was still present and the disease flared up in the middle 1920's with the influx of Banyaruanda labour into Uganda.

From that period onwards it continued to be a disease of the labour routes, centred mainly in Ankole but affecting the neighbouring districts of Kigezi and Toro, extending into Buganda and finally in 1943 into Busoga. Just because it was recognised at last that the conditions under which immigrant labour passed into and through the Protectorate were largely responsible for the increase in cases of relapsing fever it was felt that the medical aspect was only part of the whole problem of immigrant labour which should be dealt with as a whole and not piecemeal. The Report[ii] published at the time made recommendations for improved housing and medical care of the immigrant labour force and by 1947 the District Commissioner Ankole was in a position to state[iii] that there

i. Colonial Reports. Annual. Uganda. 1913 - 1914.

ii. Second Report of the Labour Advisory Committee. Organization of the South-Western Labour Migration Routes. Entebbe 1943.

iii. Provincial Administration Reports. 1947, Western Province.

had been a remarkable drop in the incidence of relapsing fever in Ankole following the disinfestation of immigrants' clothes at the new labour camp at Kerama Hill. Further, in the same year gammexane was used successfully as an agent against the tick, ornithodorus moubata, an agent which offers the hope that something can be done to check the spread of the disease without destroying all infected huts by fire.

Conditions of general living and particularly of housing[1] appear as fundamental problems in the incidence and transmission of both plague and relapsing fever and are certainly contributory to the prevalence of all intestinal diseases. Improvement in the housing of the people, though not spectacular and confined, of course, to areas where education and increasing wealth made such action possible, had by 1950 undoubtedly contributed to the lessening incidence of disease dependent on insanitary conditions and on conditions suitable for harbouring insect pests.

The helminthic diseases, as a group, give further indications of the importance of the habitat in the control of disease. An increase in the incidence of all these infections is recorded over the period and though the reported death rates are low these diseases are responsible for the low standard of general health and therefore of general lassitude and labour sub-efficiency. For example, the factors influencing the occurrence of guinea worm are

1. Colonial Reports. Annual. Uganda. 1934.

not yet clear; in some places transmiasion is facilitated by the seasonal drying up of water supplies and consequent resort to easily contaminated holes dug in swamps. A recent rise[i] in incidence in Karamoja is believed to be due to exceptional rains providing temporary pools which become added sources of infection: this suggests that both abundance and scarcity of rainfall affect distribution and incidence. Bilharzia, whose vector is a snail living in pools, is responsible for much disease, especially in the Northern Province and onchoceriasis, contracted from the bite of the simulium fly is associated with broken water, falls and rapids or projecting stones, in conjunction with dense fringing vegetation. All these infections are closely connected with water supplies and the surest way to reduce the incidence would be the provision of adequate clean water; this demands boreholes, as pools, tanks and reservoirs are all liable to contamination.

Although stress has been placed on what are basically environmental diseases, irrespective of the extent to which their distribution may be affected by standards of living and the economic development of the country, two diseases of direct transmission merit consideration because of their importance to general health and because both have been influenced by the changes of the last fifty years.

Cerebro-spinal meningitis appears to have been comparatively rare until approximately 1926 though a

i. Colonial Reports. Annual. Uganda. 1950.page.23.

TABLE VI.

Cerebro-Spinal Meningitis

Reported Cases and Deaths in selected years[i]

Year	Cases	Deaths
1915	4	3
1916	71	42
1932	235	121
1935	1,318	469
1941	112	38
1942	606	204
1943	1,191	227
1944	1,850	217
1945	2,842	350
1946	6,348	825
1947	2,630	505
1949	550	94
1950	185	50

i. Figures from Administration and Medical Returns.

sharp epidemic broke out in the Northern Province in 1917 in which 5,000 deaths were estimated[i] in the districts of West Nile, Gulu and Kitgum (3,000 in the West Nile alone). Cerebro-spinal meningitis is passed on by direct transmission and though the conditions favourable to a flare-up into epidemic form are as yet undetermined the disease appears to be located in areas having a definite dry season and is therefore much more prevalent in the Northern and Eastern Provinces than in Buganda or the Western Province. It has also been observed that there is always an increase of cases in the dry season as if the dry dust-laden air provided conditions most suitable for transmission. Up till 1939 the mortality was approximately 50% but the introduction of the sulpha drugs has cut this to about 15%-20% (see Table VI.). It has been suggested that the rapid spread and continual persistence of the disease in most districts of the Protectorate are due in part to the increased movements of the population and, particularly in the Northern Province, to the policy of the Administration in gathering people together into larger villages for the purpose of concentrating available social services. Whatever the cause, cerebro-spinal meningitis is now established throughout the Protectorate and smoulders on with small epidemic outbreaks; despite the greater number of medical staff and the use of modern drugs it is too early for confidence that the incidence as well as the percentage mortality is dropping perceptibly.

Venereal Disease presents a much more widespread, and

i. Colonial Reports. Annual. Uganda. 1917 - 1918.

T A B L E VII.

Venereal Disease

Cases treated in Government Institutions[1]

Year	Syphilis	Gonorrhoea
1943	23,599	11,415
1944	24,021	10,526
1945	31,549	14,936
1946	39,444	20,098
1947	45,464	30,111

1. Figures from Medical Department Reports.
   Increase in cases treated due to greater incidence of disease but also of the greater popularity of treatment.

serious scourge (see Table VII. for recent figures) whose proportions have apparently increased tremendously since the beginning of the century. There is no doubt that venereal disease was present in the Protectorate prior to British Administration but it seems to have been confined mainly to Buganda where in the early years, it was blamed for the low fertility of Buganda women. It seems that the natives of Buganda first contracted venereal diseases from the Arabs and that at the time of the arrival of the Europeans about twenty or thirty per cent of the native population had become infected.[i]

With the steady development of the Protectorate, which centred largely on Buganda, to which therefore, natives from the other districts were drawn to share in the profits of economic expansion, venereal diseases were spread rapidly, first into the neighbouring districts of Busoga, Bunyoro, Toro and even Teso and later further afield to the Northern Province and Kigezi. Throughout the period fertility has been low in Bunyoro, though lack of detailed statistics make it impossible to form accurate estimates. In 1913 a medical survey was made in Bunyoro and reported as follows:- "The anxiety and interest in the subject (venereal diseases) of the native authorities there (Bunyoro) can only be described as remarkable. The ravages of venereal disease would appear to be more serious than in Buganda, and the Mukama and the leading Chiefs are evidently deeply concerned with regard to the future of their populations. They seemed prepared to

i. Medical Department. Annual Report. 1932.

offer every inducement within their power to Government to commence an anti-venereal scheme. They were prepared to pass any native law, and to provide free buildings, and went so far as to discuss the offering of half of all the Chiefs'land rents in order to provide a fund."[i] And again "The vital statistics of this portion (Bunyoro) of the Northern Province have for some time past been disquieting and venereal disease prevalence is reported to be more extensive there than in any part of the Protectorate, a ninety per cent infection being reported..."[ii]

The situation was recognised as being so serious that in 1920 a venereal disease treatment centre was opened at Mulago, the central native hospital in Kampala and branch dispensaries were organised.[iii] Certainly the number of syphilis cases treated rose very considerably and though this might indicate merely a greater number of natives seeking treatment, the increased number of deaths suggested a real increase in incidence.

The greater mobility of the population, the movement of troops in both wars, and the breaking down of strict tribal standards of morality all contributed to the continued spread of infection. By 1946[iv] it was reported that the incidence of the diseases was increasing rapidly, that it was spreading to sections of the population

i. Medical Department. Annual Report. 1913.

ii. Medical Department. Annual Report. 1923. Bunyoro was at that time a part of the Northern Province.

iii. Colonial Reports. Annual. Uganda. No.1112. 1920.

iv. Report on the Post-War Development of the Medical Services. 1946.

previously almost untouched and that unless some action was taken to combat them they would seriously affect the future of the State. While there is no doubt that the war aggravated the spread of the diseases, there is little doubt that even before then increases were occurring.

A final quotation from the Director of Medical Services is sufficient comment on the fifty years struggle with the difficulties of environment, physical, economic, and social in an unceasing attempt to rid the country of a burden of disease which, together with inadequate feeding, has influenced at every stage the quantity and quality of the population. "Despite advances in treatment, the incidence of malaria, yaws, leprosy, intestinal and venereal disease has not yet been reduced and it is possible that some, for example, venereal disease, may be increasing."[1]

1. Medical Department. Annual Report. 1949.

Part II.

N U T R I T I O N

The effects of disease on the health of the population have been greatly increased by the low standards of nutrition. The main food of the natives of Uganda consisted of carbohydrates (plantains or millets) and the absence of sufficient quantities of meat and milk resulted in a diet seriously deficient in fats and protein. Such a diet was undoubtedly a contributory cause in the prevalence of under-nourishment, debility and anaemia but for many years this explanation was overlooked and all ill-health was attributed to actual disease and the general state of lethargy to indolence.

Since 1933 (which marked official recognition of the problem)[i] more and more weight has been given to the contributory effects of malnutrition and it has been recognised that states formerly attributed to disease may actually have been caused by defective nutrition. An Assistant Medical Officer reported[ii] that as many people considered that sick children were emaciated, pale and very irritable on account of syphilis, they were unwilling to accept a diagnosis of kwashiorkor[iii] and it was recognised that the Medical Authorities had been too willing to attribute many diseases of childhood to the ubiquitous

i. Medical Department. Annual Report. 1933.
ii. Medical Department. Annual Report. 1951.
iii. For kwashiorkor see below. page.143 .

syphilis without a sufficient understanding of the part played in child health by the all-important factor of nutrition.[i] This in no way invalidates the statements made in the previous section with reference to the incidence and increase of venereal diseases but it serves to demonstrate the very slow realisation by the medical authorities of the fundamental importance of nutrition for the general well-being of the population.

Nutrition in Uganda poses two separate questions, adequacy of quantity and quality of food. From what has been said in Chapter II it can be realised that actual supply of accepted basic food-stuffs must vary very greatly, depending mainly on climatic factors. With little wish or ability to store food crops, at least in quantities sufficient for more than a few months supply, the populations of the grain-eating areas are particularly prone to famine, for these regions are those of marginal and consequently erratic rainfall. Frequent devastating famines occurred in the Eastern and Northern Provinces in the period till 1920 and each was accompanied by a heavy death roll: difficulties of communications, slow and inadequate transport, a general shortage of supplies in bad years and a failure to predict the likelihood of famine following the failure of rains all contributed to the severity of these food shortages. Over and above the actual deaths from starvation these famines resulted in a population whose resistance was lowered to such an extent that the incidence of disease increased and the reduction

i. Medical Department. Annual Report. 1951. pages.33 & 34.

in the level of general health must have influenced both fertility and maternal and infant mortality.

It is encouraging to note that this problem has been tackled with foresight and determination, and although the occurrence of famine has in no way decreased, - it was an almost permanent state in the war years 1939 - 1945, - the authorities have taken every step possible to prepare for the eventuality and to deal with the crisis when it arises. Stocks of grain were kept at administrative headquarters and, with improved communications and transport, food supplies could be moved from more favoured districts into the areas of scarcity. For example, in 1939, severe drought, assisted by a locust plague caused the loss of over ninety per cent of the millet crop in Acholi; the area concerned covered about 6,000 square miles with a population of about 100,000. These people were issued with grain from communal granaries, heavily supplemented by maize meal from Kenya, the whole operation being so successful that no deaths from starvation were recorded.[i]

Though the problem of famine and consequent starvation is rooted in the environment and may be expected to become acute in areas such as Teso where a heavy population is concentrated in a grain-growing area, progress to date suggests that a closer integration of the economy of the country, the breeding of drought resistant strains of

i. Native Administration Reports 1939. Western Province (Northern and Western Provinces were amalgamated from 1939 - December 1946)

staple crops and the ever increasing improvement in administrative control by Native Administrations as well as by the Protectorate Government will make famine relief an administrative rather than a medical responsibility.

The prevention of famine is, of course, tied up with increased production and possible storage so that the surplus from good years can be carried forward to the lean ones. The encouragement of cassava planting provides a good famine crop, for cassava can be left in the ground for about three years and used when necessary: at the same time it provides an adequate ground cover and thus prevents excessive erosion. A greater diversity of crops relieves dependence on the staple, and the increased yields resulting from longer resting and manuring, offers a greater surplus provided that the population does not increase at the same rate as the general productivity.

It remains true, however, that all areas with a protracted dry season and brief and erratic rains must, at present, be liable to continual danger of famine and that the expense of famine relief must impose on the country's finances a burden which is unwelcome and one which is possibly unnecessary. This is a typical African problem and one which is fundamental to the environment. "And it is also necessary to remember that, in a climate verging on the semi-arid, fluctuations, in space as well as in time, of the meteorological elements and chiefly of rainfall are characteristic and greatly handicap the

sedentary occupation of the land by agricultural peoples."[i]

But mere scarcity of food is only a part of the nutrition problem. The other part is the condition of dietary deficiency. The cause lies in badly balanced diets. Clearly then, of all the problems which confront the Medical Department[ii] none is of greater importance than the removal of the condition of sub-nutrition so prevalent among the local African tribes. It is safe to say that if the general level of nutrition among the people could be raised the incidence and severity of the common African diseases would be greatly diminished. The recent recognition of the problem was due to the lack of experience of tropical conditions and the very natural preoccupation with disease. Tropical medicine had grown up under the influence of the knowledge of parasitology and all efforts were directed towards the reduction of parasitic complaints such as malaria, helminthic disorders etc. Public health authorities had been dominated by the desire to decrease infections and parasitic disorders and had failed to appreciate the desperate need for improved diets.[iii]

In order to grasp the full scope of the question a nutrition survey was made in 1939[iv] and the main conclusions are summarised:

1. Conditions of sub-nutrition are widely prevalent

i. C. Gillman. Problems of Land Utilisation in Tanganyika Territory. South African Geographical Journal. 1938. Volume XX.

ii. Medical Department. Annual Report. 1939.

iii. Review of Nutrition in Uganda. 1945

iv. Medical Department. Annual Report. 1940

in Teso in those areas where there is relative overcrowding on the land.

2. In certain families where the ratio of consumers to workers is high, areas under food crops may not be large enough for the adequate support of the family.

3. Where fish forms part of the diet, the evidence of sub-nutrition is less obvious than in other areas.

4. Families with a large acreage of sweet potatoes show less deficiency than those with small. This is probably due to the use of sweet potato leaves as it does not hold good in an area of Kigezi where much sweet potato is eaten but no use made of the leaves.

5. Leg ulcers are rare in fish-eating peoples.

6. Immigrant labourers (Banyaruanda) of poor physique who are fed on an adequate mixed diet and protected from the effects of malaria infection become labourers of first class quality.

7. A better balanced diet would remove most of the sub-nutrition existing at present.

These conclusions point to the danger of absolute dependence on the two main staples, plantains or millet, to the benefits of inclusion of green vegetables and fish in the diet and to the dangers of overcrowding in reducing the acreage under food crops below the critical minimum. From this it can be seen that the favoured elephant grass areas are those perhaps most affected. Dependence on plantains is almost complete, apparently largely from choice, as a variety of annual crops could be grown on holdings in rotation with cotton; fish is only consumed by people living on the lakeside, whether on Lake Albert

or Lake Victoria and a trade in fish to the inland areas has never been developed, and, in Buganda especially, the desire to increase the cotton acreage has reduced the area under food crops beyond the danger level. Most of these considerations apply to the grain areas though dependence on grain has never been quite so complete as that on plantains and further, most grain-eating people keep cattle which provide at least a small amount of milk and meat to supplement the predominantly carbohydrate diet.

Nutritional defects therefore exist in the elephant grass areas because of a stubborn determination on the part of the native to persist with an unbalanced diet despite the opportunities to counteract this trend, while in the short grass areas some diversity already exists and the danger comes more from deficiency in actual quantity.

Apart from less favourable conditions for growing crops in the short grass areas the dry season is longer and more pronounced than in the plantain areas; this entails longer storage and if the harvest has not been too good the seed reserve for the following season is encroached upon. A vicious circle is created which may become accepted as a normal state of affairs.[1]

An important step forward in the study of malnutrition was taken with the recognition of a state of

1. Review of Nutrition in Uganda. 1945.

'malignant malnutrition' or kwashiorkor in many Africans.[i] This is the clinical condition resulting from a relative lack of protein after weaning, a deficiency which causes physiological changes which accentuate the mal-absorption of food. The reasons for this state lie in the fact that the weaning of African babies is unduly prolonged. Breast-feeding is continued to the end of the second year or even longer. It is probably not the continuation of breast-feeding which is in itself harmful, but the inability to teach the child to eat suitable foods. These underfed babies fail to put on weight, their hair ceases to be black and curly, becoming brown, straight and soft. The skin also becomes pale and the disease should be easily recognisable by Africans. Not only does this condition cause heavy mortality among African children but it is also responsible for serious deficiencies in the adult.[ii] To quote the findings of the 1948 Labour Efficiency Survey:- "The whole weight of modern research suggests that many Africans pass through this stage (kwashiorkor), that many die during it, and that those who survive never recover completely, Doubtless many have only burnt-out scars in the internal organs and may, if they receive a good diet, recover full efficiency of mind and body. These persons appear normal when examined

i. See Trowell, H. C. & Muwazi, E. M. K. Archives of Diseases in Childhood. 1945. Volume XX. page 110.
See Trowell, H. C. & Muwazi, E. M. K. Transactions of the Royal Society of Tropical Medicine and Hygiene. 1945. Volume XXXIX. page 229.
See Trowell, H. C. Kwashiorkor. Contribution to Encyclopoedia of Medical Practice. 1951.

ii. African Labour Efficiency Survey. Edited by C. N. Northcott. 1949 Colonial Research Publication No. 3. page86.

by the usual clinical methods and many medical men would consider them normal. Ordinary persons would find them apathetic, given to laziness and sloth, short and slight in build, and generally ineffective." [i]

The causes of this state, found in Uganda, particularly in Buganda, Mbale and the West Nile are partly environmental and partly social and customary. Supplies of animal protein have been very scarce up till now in the elephant grass areas, and in other parts of the Protectorate where the presence of tsetse prohibits the keeping of cattle. Increasing supplies of milk, sunflower seed and soya beans will help to make up the deficiency, which could be cured by the introduction of adequate quantities of meat into all areas. These improvements will have little effect until this custom of late weaning is broken and African mothers are taught the necessity and advantage of rearing their children on an adequately balanced diet.

It is, perhaps, not out of place to direct attention to the effect of this system on the birth rate, particularly in Buganda. In the first place actual fertility is probably reduced by the effects of kwashiorkor on female children and secondly the habit of separation of husband and wife during the long period of suckling has an undoubted effect on the birth rate.[ii]

Emphasis has been laid on disease and nutrition as

i. African Labour Efficiency Survey. 1949. Colonial Research Publication No. 3. pages.86 - 87.

ii. Lugard. The Story of the Uganda Protectorate. page.30. This custom is now less common than hitherto.

they affect each other and as they affect the numbers and the quality of the population.

Although the combination of a tropical, disease-ridden country and a population basically ignorant of methods of controlling or curing disease and of improving diet has caused diminution or stagnation of population by low birth rates and high death rates yet it is not on the crude numbers that attention should be focussed. The history of production, as outlined in Chapter II, has had as its aim the exploitation of the resources of the Protectorate for the improvement of social, economic and political standards but the basis on which the success of that exploitation depends is the presence or absence in the Protectorate of a labour force of increasing health and efficiency, fired by a determination to accomplish the task of using the resources of the environment for the benefit of the whole population.

CHAPTER IV.

POPULATION AND PRODUCTION

LABOUR AND MIGRATION

The demand for labour in Uganda, in whatever numbers and of whatever standard, is a characteristic only of the last fifty years. Prior to 1900 the self-sufficient subsistence economy prevailing in all parts of the country emphasised the self-contained nature of the various systems of primitive subsistence. Such movements of population as did take place towards the end of the nineteenth century were controlled either by the action of Arab slave traders and chiefly affected the Eastern and Northern Province, or by the domination of climate as it influenced the nomadic pastoralists of Karamoja and Ankole. Apart from these areas movement was on a small scale and probably could be termed fluctuating rather than showing a definite trend in any particular direction. Inter-tribal warfare, often on a very small scale resulted in a certain amount of tribal intermingling but there is no evidence of tribal migrations or of 'migration routes' except in so far as this term could be applied to the slave routeways, eastwards to the Kenya littoral or northwards into the Sudan.

In fact, it was the permanence of occupation rather than its transience which was characteristic of the 1900 position. Among agricultural peoples, the villages of the short grass areas and the permanent nature of the

plantain crop in the elephant grass regions contributed to a fixed population while the small movement taking place in regions of pastoralism or shifting cultivation was restricted within definite tribal boundaries. Neither pressure of population nor climatic disaster was sufficient to impose the necessity of migration.

The 1900 position revealed a situation in which development of the country was dependent on resources and labour. Resources of all kinds were available for exploitation under European enterprise and direction and the progress that has been sketched in Chapter II is the first stage in their development. But whereas resources were available in all parts of the country, (although essentially centred in the elephant grass areas) the labour needed over and above the requirements for subsistence, was not.

The background to this problem is complicated and the results vary. Under native systems of agriculture small plots were cultivated by family labour and the introduction of economic crops was based on an extension of this system to include cash crops, using the same methods and organisation. Usually an increased area was put under cultivation but it was unlikely that there was increased manpower on which to draw. Peasants must either work harder and longer hours, or must obtain other labour to supplement the resources of their own families. This affected districts in different ways. In the Eastern Province for example, where large families were the rule, the introduction of cotton and the extension of

the cultivated area resulted in an intensification of effort made more possible by the tradition of both sexes working together in the fields. Not until much later did it transpire that cutting down both the area and labour devoted to each crop, resulted in acceleration of soil erosion and reduction of yields. In Buganda, however, where small families were quite common, particularly among the upper classes, any extension of agricultural effort placed a very severe strain on labour resources. This was further complicated by the traditional superiority of the Baganda and their willingness to employ members of other tribes as servants or slaves.

Early development, centred on cotton cultivation and the preparation of the crop for export involved more than the introduction of cotton to the agricultural rotation. It has been stressed[i] that the early concentration of economic production in Buganda and the Eastern Province was based on the environmental advantages of the elephant grass country including its accessibility to lake ports and to the necessity for restricting the area in which facilities could be provided for marketing and transport. These various circumstances created a situation in the Protectorate where, almost to the end of the First World War labour was required in the elephant grass region of Buganda and in the EasternProvince for the growing and processing of cotton, the construction and maintenance of of roads and railways, the establishment of the various Government Departments and the operation of transport

i. See Chapter II. Part I. page.38.

services which included porterage. The initial phase of this development coincided with the sleeping sickness epidemic in this favoured region whereby a heavy proportion of the population of the lakeside areas was lost by death or compulsory evacuation, thus further reducing the available manpower. Additional demands were made on the labour force by the establishment of European plantations and by prospectors and miners on an increasing scale.

It appeared, therefore, as if the labour shortage in the areas of greatest production would have to be met by the attraction of labour from areas not yet involved in economic development. But this presupposed that the potential labourers were willing to engage in labour and that conditions suitable for the employment of this labour could be provided. The attitude of the African to this question of paid labour is of first importance in that it determines the adequacy and reliability of supply. For most Uganda natives the necessities of life were few and easily satisfied so that they were independent of paid employment of any kind. Even now, in many areas, the original economy of native society remains largely intact with a resulting lack of incentive and the consequent prevalence of demand over supply of labour. Wage earning is not an integral part of the African social and economic structure and a wage earner, therefore, has no significant social status.

Incentive was provided by the Government in the form of taxation for which some type of cash earning activity

was necessary and it was intended that the gradually rising standard of living, in all parts of the country, should bring with it the demand for an increasing number of consumer goods. The general response to such incentive has been to encourage the Africans to become 'target workers' as Orde Browne calls them.[i] The worker left his village with the definite intention of coming back with a specific sum; at the same time he was unwilling to be absent from his own community for as much as a year, as that would entail dropping out of the normal agricultural cycle, so, as a rule he preferred not to remain away from home for more than six to nine months.[ii] This system established the practice of migrant, rather than fixed, labour. The complications that arise from this system for the labourer include the distance which may have to be covered between his home and his place of employment and the difficulty of obtaining suitable food should he work, from necessity or choice, in a district other than his own.

From the employers point of view the difficulties are even greater. Food and housing must be provided for this type of labour and there are frequent, if not constant, changes in the labour force, thus preventing any continuity, sustained training and consequent efficiency. This partly explains why practically all African labour is unskilled though admittedly this situation is aggravated by the

i. G. St.J. Orde Browne. Labour Conditions in East Africa. Colonial Office Publication No. 193. page.5.

ii. Ibid. page.5.

absence of training facilities and the competition of Asian skilled workers. Further, as indicated in the last chapter the constant presence of a high incidence of disease and malnutrition reduces the general level of output and efficiency both by forced absenteeism and by low performance. It must be remembered that the worker remains a farmer whose excursions into wage-earning employment are a seasonal side-line. His interests and attachments remain centred in his home village; he will marry and rear his family there and it is likely that, as he gets older, he will abandon his wage-earning excursions and settle down for good.

Surveying the labour position generally, early Protectorate development was much hampered by the natural tendency of the African to remain anchored to his own plot and only to engage in wage-earning as a result of great necessity. In the first years of the century the Baganda, influenced by newly acquired wants and the Hut Tax of 1900, were persuaded to disregard their habitual prejudice against unskilled work and in consequence travelled widely to earn money, in some cases, even as labourers. The enthusiasm with which the Baganda have adopted new ideas was shown by their whole-hearted acceptance of cotton growing as a better way of earning money, a method which allowed them to remain at home and to enjoy the benefits of permanent residence in their own districts. As a result of this movement together with the actual reduction of population as a consequence of the sleeping sickness epidemic, the Government labour supply had diminished by 1908 from adequacy to acute shortage. As the progress of

the country was utterly dependent on labour supply for the growth of crops and the establishment of adequate communications and transport the Government instituted the 'kasanvu' system of compulsory paid labour under which drafts were supplied as required by the Saza chiefs to the employing departments, principally the Public Works Department. This compulsory supply from the home districts was augmented by movement into the area of voluntary labourers from surrounding tribes, particularly Basoga, Banyoro and Batoro who came to Buganda to work on European plantations, but, finding conditions there too strict and generally unacceptable, overflowed into work for Baganda cotton cultivators, thus providing the basic labour force for cotton production. The early predominance of the Baganda over neighbouring tribes made possible this widespread employment by one tribe of men of other tribes although the system is not often found in Africa.[1] Tribal affinities and environmental similarities made it possible for members of these three tribes to work in Buganda as all are mainly plantain eating, and immigrants found conditions and diet in the working district similar to those in their home regions. This initial movement established the custom of migrant labour and underlined the importance of Buganda as the centre of employment and production.

It is quite impossible to estimate the numbers employed in these early years. The three main categories of employment thus became defined under :- transport, in

i. Summary of a Report on Tribal Admixture in Buganda. East African Institute of Social Research, Makerere, Kampala,

T A B L E VIII.

Government Transport Department

Means of Transport Employed[i]
1912 - 1913 and 1920 - 1923

Year	Tons handled	Motor	Cart	Porter	Contract	Road-Rail
1912-1913	7,507			1,427		
1920	4,742	1,516	1,444	1,045	737	
1921	15,876	7,885	4,500	1,783	1,708	
1922	14,444	8,980	3,182	1,207	1,075	
1923	22,968	12,760	3,985	1,075	1,460	3,688

i. Colonial Reports. Annual. Uganda.

which porters carried the bulk of goods moved; road and rail construction, manned by natives labourers under European supervision and cotton growing for Baganda proprietors. Thousands of natives[i] were reckoned to be employed in the wasteful system of human porterage,[ii] even as late as 1912, and the construction of the Busoga railway (Jinja to Kakindu, later extended to Namasagali) gave employment to approximately 5,000 labourers every month.[iii] Whatever the numbers there is no doubt as to the importance of the general trend and this was appreciated by the authorities who accepted the fact that the demand for labour in the Buganda Province had already grown to such an extent that it had become necessary to augment the supply by drafts of labourers from other Provinces. Further, it was essential to maintain the mobility of the available labour supply.[iv]

The main employing Government departments, - Public Works and Transport, - were much taken up with the mobility factor and this pre-occupation emphasised the importance of migrant 'bachelor' labour, working through agreed periods, (though not on written contracts), for a cash target. This resulted in a rapid turn-over of unskilled, comparatively inefficient labour. The competing claims of agricultural development, public works and transport accentuated the labour shortage. Labourers preferred work for native landowners in that both the task and the

i. Colonial Reports. Annual. Uganda. No.743. 1911-1912.
ii. See Table VIII.
iii. Colonial Reports. Annual. Uganda. No.708. 1910-1911.
iv. Colonial Reports. Annual. Uganda. No.743. 1911-1912.

conditions of labour were easier and more congenial than the long hours and regular work demanded by European supervisors. Compulsory labour drafts were thus essential to maintain transport facilities, for deficiencies in this respect threatened the continued success of the cotton industry. The moving of the cotton crop presented a great problem in that it resulted in heavy demands for porterage in February and March when natives should have been preparing the land for the principal food crops. The first competition between economic and food crops came, therefore, not on the score of land but on that of labour. Even as late as 1913 when human porterage had almost been abolished in the Protectorate generally, it is reported[i] that European plantations were affected by labour difficulties and great emphasis was laid on the dependence of the future expansion of the cotton industry on adequate transport. Although carts and ox-transport were gradually replacing human porterage on the more frequented roads throughout the Protectorate numbers of carriers were still employed in connection with the transport of cotton in the Eastern Province.[ii]

The urgent demand for additional labour was continuous at this time and estimates of potential labour supply, based on population figures, gave no indication of the labour available; the native population was, in fact, numerically sufficient to meet existent demands, but the natives had not yet reached the stage where steady

i. Colonial Reports. Annual. Uganda. No. 831. 1913 - 1914.
ii. Colonial Reports. Annual. Uganda. No. 914. 1915 - 1916.

employment was considered a normal state and the vast majority only worked for short periods at irregular intervals. Even in Buganda where the native was credited with many virtues he had not learned to appreciate steady employment, and it was difficult to induce him to work for more than a couple of months at a time. Rather than be harassed by the constant solicitations of chiefs to engage for labour these potential workers often prefer to move further afield, a tendency which was responsible for a good deal of movement of population in the more outlying parts of the Province. There was no doubt that the growth of large trading centres, such as Kampala, with a large floating population, and the greatly increased facilities and encouragement to movement among the native population for trade purposes, had increased the difficulties of the chiefs and lessened their hold on their people.[i]

The introduction of economic crops, their concentration in Buganda and the Eastern Province, the consequent growth of facilities in this region and the demands for labour to meet these various requirements encouraged a new movement of peoples within the Protectorate. Movement took place, both voluntarily and under compulsion, to the centres of production, especially from the outlying districts such as Lango, Acholi and Bunyoro where economic crops had not yet been established. Most of the labourers were seasonal workers, especially those from the short grass areas who found it difficult to settle down in a

i. Colonial Reports. Annual. Uganda. No. 831. 1913 - 1914.

T A B L E IX.

Labour Figures 1914 - 1918 War
(natives only)[i]

38,310	Recruited for Uganda Transport Corps (Carrier Section).
1,741	Stretcher Bearers.
3,576	Porters supplied to East African Carrier Corps.
5,763	Porters for service in German and Portuguese East Africa.
8,429	Porters for special Congo Carrier Corps.
10,000	To five battalions of the 4th King's African Rifles.
1,000	For Medical Corps set up in 1917.
68,819	Total.

i. Colonial Reports. Annual. Uganda. No. 1112. 1920.

region where they could not obtain the normal articles of diet, and among people with whom they had little affinity of race or tradition.

The impact of the 1914 - 1918 war had serious consequences on an economy already deficient in labour. Table IX gives the Labour Figures which again emphasise the importance of porterage in all transport operations. The immediate result of a reduction in the Protectorate labour force was a reduction in cotton output and a severe shortage of labour in Buganda, partially relieved by the influx of labourers from Mubende moving in to the central area in search of remunerative work. The general labour shortage was made much worse in 1918 - 1919 when the occurrence of a particularly severe famine in the Eastern Province coincided with the height of the influenza epidemic: every concern dependent on migrant labour suffered severely and though not important in the overall picture, this year is indicative of the hazards which beset the supply of labour: any occurrence of severe famine or disease caused the supply to dry up for a short time and thus flow of labour must be regarded as intermittent rather than continuous.

This period up till 1920 was characterised by the constant demands for labour, of any description; the scarcity and complete inadequacy of voluntary labour, based on the unwillingness of the African to forsake his peasant existence, and the consequent imposition of forced labour in order to make up the deficiency compelled employers to

accept the good, bad and indifferent.

The period after the end of the first World War showed a change in outlook and supply. With the removal of the demand for man-power for war purposes the potential supply of labour was largely increased.[i] At the same time the generally increased productivity and the successful cotton crop caused a considerable rise in the demand for labour of every description. Supply varied in different districts, it was reported as sufficient in the Western Province but in other areas, particularly in Buganda, the necessary quota was difficult to obtain: the joint problems of labour supply and wages tended to become increasingly intricate.[ii] The wage problem was again a reflection of the attitude of the native to cash-earning labour. Should employers raise wages in an attempt to attract additional labour in times of acute scarcity the result was that 'target workers' accepted employment but stayed a shorter time. This accounts for the claim frequently made that the offer of a higher wage results in less work rather than more.[iii]

Despite the continued shortage in Buganda the general position had undoubtedly eased, partly owing to the suspension of development on the majority of European estates. By this time it was fully recognised by the Government that the provision of an adequate labour force

i. Colonial Reports. Annual. Uganda. No.1079. 1919 - 1920.
ii. Ibid.
iii. G. St. J. Orde Browne. Labour Conditions in East Africa. Colonial Office Publication. No.193.

was urgent and necessary and further that no satisfactory system could be built on the foundation of compulsory labour. Point was given to discussions of abolition of kasanvu labour by the 1921 world slump in which the price of Uganda cotton dropped from an average of Shs 33/- per 100 lbs in 1920 to Shs 10/- per 100 lbs in 1921. So much labour was involved in the growing, transport and processing of cotton that a set-back of this type resulted in a great lessening of the demand for labour, but did not involve unemployment.

Kasanvu labour was therefore abolished in Buganda at the beginning of 1922 and in all other areas of the Protectorate at the end of the same year.[i] The year 1923 saw a revival in world trade and this brought home to the employers the full significance of labour to the economy of the country. 1924 marked the establishment of a Government Labour Department and of a Government and Planters Association, both bodies being chiefly concerned with the provision of a labour force of adequate numbers and reasonable efficiency.

It was considered possible to organise labour recruitment from the parts of the Protectorate where cotton was not established. The Labour Department, therefore, recruited both in the south west of the Protectorate, Ankole and Kigezi and in the West Nile while the planters obtained their workers from the West Nile

i. Colonial Reports. Annual. Uganda. No.1182. 1922.

T A B L E X.

Labour Recruitment
1925 - 1946

For Government Departments.

1925.....22,944
1926.....18,112
1927.....5,305
1928.....1,027

For all Purposes

Numbers for which Permits were issued[i]

Year	Total	W. Nile	Banyaruanda	Others
1929	22,255			
1930	20,305			
1931)	No figures available.			
1932)				
1933		8,960		
1934	13,085			
1935	21,814	13,414	7,600	8,000
1936	33,219	19,947	10,972	2,300
1937	34,004	21,568	9,590	2,846
1938	41,347	16,260	22,087	3,000
1939	38,255	7,385	28,870	2,000
1940	30,524	8,311	21,413	800
1941	19,924	7,584	12,340	
1942	20,009	5,864	14,145	
1943	12,792	1,854	9,715	1,223
1944	15,102	3,071	9,915	2,116
1945	16,152	4,132	9,520	2,500
1946	20,630	5,965	13,103	1,562

i. Colonial Reports. Annual.Uganda.1929 - 1938 &
Labour Department Annual Report 1946

which they had opened up as a labour reservoir in 1918.[i] The underlying causes for this territorial selection lay, as indicated, partly in the decision to recruit in areas not primarily concerned with the production of economic crops. In addition, in the West Nile the average standard of physique and general health was higher than anywhere else in the Protectorate except possibly in the adjoining areas of Acholi, and labour from these districts was consequently more efficient than any other obtainable in the Protectorate. It was not pressure on land or even severe financial stringency that forced West Nile natives to accept work in Buganda or in any other of the central districts but rather a desire to travel, to see something of the 'great city' (Kampala) and possibly to earn sufficient for a bride price of for luxuries which they could not otherwise afford. Labour from the north west is Nilotic; the men are robust, good workers, able to look after themselves and their own interests;[ii] so that they were regarded by employers as the best labour in the country. For that reason they were greatly sought after but the supply was limited. There are no adequate figures available for the early years but all the evidence goes to support the view that then, as now, the great proportion of these north west labourers move southward as contract labourers, to work for non-native enterprise; they are not found as employees on Baganda-owned cotton plantations. This is probably due not so much to their preference for non-native employment, public undertakings, plantations or

i. See Table X.

ii. Labour Department. Annual Report. 1946. page 4.

cotton ginneries as to their unwillingness to 'knuckle down' to Baganda, whom they regard as effete.[i]

Very different circumstances form the background to the provision of Protectorate labour from the south west. In actual fact some south west indigenous natives, (for example, Banyankole), were recruited for labour in Buganda but the Bakiga of Kigezi have always been most unwilling to offer for labour outwith their own district. The increasing over-population in Kigezi[ii] inspired no outward movement of potential labour and the Bakiga preferred to remain in over-crowded conditions rather than migrate into the lower-lying central areas.

Labour supply from the south west was thus extra-territorial. The neighbouring territory of Belgian mandated Ruandi-Urundi was inhabited by an extremely dense population, an average of 164 per square mile. There is not sufficient acreage to provide adequately for both the human population and approximately one million head of cattle. Where water is available the land is intensively cultivated, even the swamps being cleared by forced labour to produce two crops during the dry season.[iii] Diet, though probably sufficient in quantity is not sufficient in quality so that the majority of the people in this area suffer from sub-nutrition. The motive behind the migration was therefore not only a desire to earn the

i. Table XII. 168. indicates the high percentage of the population in Nilotic areas serving with the Forces 1939 - 1945.

ii. See Chapter VI. page.223.

iii. Second Report of the Labour Advisory Committee. Organization of the South-Western Labour Migration Routes. Entebbe.1943. P 18.

better wages available in British Territory, but also the hope of finding ampler nourishment than was available in their home area.[i] That these were not the only motives is suggested by the Labour Advisory Committee in their report.[ii] Other and perhaps stronger reasons appeared to be, that the visit to Buganda had become a custom and was regarded in much the same light as the 'grand tour' was in the England of the past, so that, in some areas, girls would not marry men who had not been to Uganda. Moreover no tax was demanded from anyone absent from the territory for more than nine months in any year.

For these varied reasons plus the overwhelming causative factor that abundant work was available in Uganda, Banyaruanda moved into the Protectorate in great numbers, only a small proportion of whom represented recruited labour. The 1928 figures from the south and south west were estimated at 60,000 but it must be remembered that unlike the West Nile labour these Banyaruanda were ill-fed and disease-ridden when they left home and by the time they had covered on foot the distance of approximately 400 miles to places of employment, with little or no food or shelter available on the journey, they were labourers of doubtful efficiency and almost certainly were carriers of disease.

For some years the labour position remained almost static. Demand continued fairly high, but while coffee

i. G. St. J. Orde Browne. Labour Conditions in East Africa. Colonial Office Publication No. 193. page.13.

ii. Second Report of the Labour Advisory Committee. Organization of the South-Western Labour Migration Routes. Entebbe.1943. page.18. See also Shantz. Urundi. Territory and People. Geographical Review. Volume XII. No.3. 1922.

T A B L E XI.

Labour Employed
(excluding agricultural labour)
1933 - 1938[i]

Numbers Employed - Average per month.

1933.....49,685
1934.....48,756
1935.....45,756
1936.....49,636
1937.....64,135
1938.....72,680

Selected Occupations

Number Employed - Average per month.

	1935	1936	1937	1938	1946
Cotton Ginneries (seasonal)	15,000	17,886	17,500	17,500	20,000
Mines	8,000	13,000	10,500	10,500	3,400
Coffee and Tea Estates	5,000	5,000	5,000	5,000	5,700
Sugar Estates	7,000	10,000	12,000	12,000	19,000
Sisal Estates	1,400	2,000	2,000	2,000	1,300
Kampala sewerage			2,000	2,500	
Electricity supply			1,000		
Tobacco Factories					1,800
Timber Industry					6,100

i. Colonial Reports. Annual. Uganda. 1933 - 1938.
Labour Department Annual Report. 1946.

and rubber estates required less the newly-opened Indian owned sugar estates and factories required more.[i] The 1931 - 1935 depression resulted in some reduction in demand so that requirements were met, in some cases without recourse to recruitment. As a measure of retrenchment the Labour Department was reduced to a single Inspector of Labour and returns for the period are very slight.[ii] There seems little doubt however that a constant stream of native labour moved from Belgian Ruanda into Uganda, and there appeared to be a greater tendency for these immigrants to settle permanently in the country with their families. Such immigrants would escape the payment of poll tax for a short time and would also escape the registration of births and deaths. It is this last fact which may account for the errors in estimates of population, as the calculations made at the time took no note of migration and were almost certainly based on inaccurate registration. It is quite certain that of these extra-territorial immigrants the greater proportion worked as labourers for native cultivators. Such labour being principally employed in the cultivation of cotton and to a lesser extent on domestic plantations. Moreover, there are indications that these immigrants were penetrating to the Eastern Province and even to Kenya during the ginning season.[iii] The attraction of Buganda cotton fields lay in the conditions of general environment as in this

i. See Table XI.

ii. Colonial Reports. Annual. Uganda. No. 1601. 1931.

iii. Colonial Reports. Annual. Uganda. No. 1670. 1933. See also Tables XI. and XIV. for employment figures.

area of continuous cropping there was no problem of food supply for those working on the land and, in addition, lack of population pressure even in the more favoured areas ensured that empty land was available for foreigners wishing to settle on their own plots. Conditions of employment were attractive. To quote Orde Browne "local proprietors (in Buganda) of the very considerable native plantations are well pleased to employ these wandering strangers, offering them little in the shape of cash, but attractive conditions, easy-going employment and ample food." [i]

It has already been noted that it was in the period immediately before the 1939 - 1945 war that Government became aware of the many problems facing the Protectorate, problems of soil erosion, nutrition and labour, to the extent that in 1938 a Committee of Enquiry into the Labour Situation in the Uganda Protectorate laid special emphasis on the problem of Banyaruanda immigrant labour and reported as follows:- "These 100,000 annual migrants constitute perhaps the most intractable feature of the present problem. Purposeful, silent, not readily to be deflected, they may be seen in groups on almost any day in the year on the south-western roads pressing on relentlessly towards Buganda, reminiscent of nothing so much as a stream of ants. Both on humanitarian grounds and on the practical one of safeguarding the health of Uganda's indigenous population some steps should be taken to

i. G. St. J. Orde Browne. Labour Conditions in East Africa. Colonial Office Publication. No. 193. page.13.

T A B L E XII.

1939 - 1945 War

Demobilisation Figures[i] by Districts
(Enlistments 77,131 of which 2,101 were regulars)

District	Number	Population 1948	Number Demobilised as percentage of population.
Acholi	4,563	215,655	2.1
Ankole	1,958	400,924	.48
Bunyoro	497	108,380	.45
Busoga	4,850	505,998	.95
Karamoja	415	125,567	.33
Kigezi	3,817	395,529	.96
Lango	2,478	265,890	.97
Masaka	3,251	317,688	1.05
Mengo	11,857	899,596	1,3
Mubende	1,176	84,878	1.3
Mbale	7,302	599,950	1.2
Madi	585	37,756	1.5
Teso	6,745	402,564	1.6
Toro	2,415	258,873	.93
West Nile	3,686	298,307	1.2
Total	55,595		

i. Civil Re-absorption Report. 1948.

mitigate the hardships of the journey for these people once they have entered Uganda territory."[i] Since this report was issued, two others have been concerned with the problem of Ruanda-Urundi labour.[ii] In one of these[iii] detailed recommendations are made for the supervision of this stream of migrant labour and in the other Major Orde Browne in his"Labour Conditions in East Africa"[iv] devotes a special section to immigrant labour from the south-west and reveals a situation which seemed to come as something of a surprise to the Government. He stresses the fact that, in Buganda, native agricultural production depends primarily on this supply of labour and it was later stressed by the Labour Department[v] that not only was there a very high percentage of unfitness among the population generally but emphasis was laid on the extent to which the country had become increasingly dependent on immigrant labour from outwith the boundaries of the Protectorate (chiefly from Ruanda-Urundi) in the development of primary products and industrial enterprise.

The conclusion is repeated by various authorities and must be accepted though the exclusion of figures of agricultural workers from the labour statistics make it difficult to estimate the true role of immigrant labour.

i. Report of the Committee of Enquiry into the Labour Situation in the Uganda Protectorate. 1938.

ii. Though rather loosely termed Banyaruanda, the labour figures given often include Tanganyika Territory labourers.

iii. Second Report of the Labour Advisory Committee on Organization of the South-Western Labour Migration Routes. Entebbe. 1943.

iv. Colonial Office Publication No. 193. 1946.

v. Labour Department. Annual Report. 1946. page.2.

T A B L E XIII.

Reported Movement of Labour To and From the South West 1939-1946[i]

I. Kakitumba Bridge (Ruanda-Urundi)[ii]

Year	To Uganda	From Uganda
1939	13,331	32,912
1940	71,682	20,708
1941	65,194	52,388
1942	42,113	42,910
1943	38,572	22,451
1944	18,546	13,272
1945	41,509	17,365
1946	38,113	24,501

II. Kyaka Ferry (Tanganyika - Ruanda-Urundi)[ii]

	To Uganda	From Uganda
1939	11,488	64,057
1940	3,342	29,797
1941	8,206	48,382
1942	26,707	50,057
1943	21,008	32,003
1944	23,581	28,446
1945	59,632	20,414
1946	100,017	36,402

i. Labour Department. Annual Report. 1946.

ii. See Map 13.

Further, the presence of probable errors in the published figures for entry to and departure from Uganda allows these to be no more than guides to the totals as the system of checks was somewhat vague and many labourers slipped across the border rather than be subjected to questioning, (mainly on health grounds) at the authorised points of entry.[i] It was not possible to obtain accurate figures of those entering Uganda as the Ruanda - Tanganyika - Uganda border cuts through long stretches of uninhabited country and immigration is possible at many places along the line, so that any attempt at herding the intending immigrants to cross at selected points resulted in increased dispersal along the border.[ii] Moreover on the return journey, the figures quoted become even less accurate as the man were frequently carrying home dutiable goods so that there was still greater tendency to avoid official supervision. Available statistics are thus apt to be entirely misleading.

Recommendations were made[iii] for the construction of camps at points of entry at Kakitumba Bridge (Merama Hill camp) and Kyaka Ferry,[iv] it being considered that the provision of shelter, food and medical care for the migrant labourers was a first essential step[v] to increase the

i. See Table XIII. page.170.

ii. Medical Department. Annual Report. 1945.
See also G. St. J. Orde Browne. Labour Conditions in East Africa. Colonial Office Publication No.193. page.89.

iii. Second Report of the Labour Advisory Committee. Organization of the South-Western Labour Migration Routes. Entebbe.1943.

iv. See Map 13.

v. Second Report of the Labour Advisory Committee. (as above). page.9.

efficiency of the resulting labour force and to decrease the danger of the spread of disease resulting from these migrations. It has been emphasised in Chapter III that the Busoga sleeping sickness epidemic of 1942 was probably due to infection carried by Banyaruanda labour and the connection between migrant labour and relapsing fever was well established.

In the meantime the outbreak of war caused a sudden cessation of movement of labour from Ruanda mainly on account of fear of conscription of those entering British territory. The consequent labour 'gap' was filled by increased numbers of young men from Bunyoro, Toro and Ankole some of whom were accustomed to seeking work at some distance from home. In the case of the Banyoro there can be no question of economic pressure but the exodus has become an established custom and the expedition was regarded in the light of an adventurous experience, to be welcomed as a temporary escape from the monotony of tribal and family control. In all these western areas (except Bunyoro) population numbers showed no sign of decrease and improvements in transport did much to ameliorate the most serious handicap, the long journey on foot, and the extension of the 'bus system has enabled labour to travel backwards and forwards with greater ease.

Despite these movements labour remained scarce throughout most of the war. Shortages have been attributed

to a number of factors, for example:-

1. The absence of many able-bodied men serving with the Forces, especially from districts such as West Nile and Acholi[1] which in normal times supplied the bulk of labour employed in industries and plantations.

2. The considerable amount of money received by relatives of serving men in family remittances and consequent lack of incentive to work.

3. The shortage of attractive imported goods.

4. The severe food shortages in many parts of the Protectorate with subsequent restriction of movement.

5. The fact that food shortages and reduced diets had weakened the population who felt unable to undertake arduous contracts when earnings were not vital (see 2. and 3. above).

Even after the end of the war the shortage remained. A survey taken in June 1948[ii] showed that, even allowing for increased mechanical aids the total labour employed on all African owned undertakings was approximately 23,000 short of requirements. This shortage of labour was considered to be a serious threat to the general development plans which were likely to be hampered unless more attractive terms of employment and improved methods of using man-power were combined.

It is interesting to speculate if this persistent shortage in African owned undertakings is due to increased demand, decreased immigration or the diversion of the

i. See Table XII. page.168.

ii. Labour Department. Annual Report. 1948.

TABLE XIV. A.

Buganda

Percentage of Total Labour Force in selected occupations at 30th. September 1950.[i]

Types of Occupation	Percentage of Total Labour Force (71,265)
Agriculture	27.6
Construction (mainly Public Works)	27.5
African Local Government	11.2
Manufacturing and Light Industries	7.8
Transport and Communications	4.5
Protectorate Government (excluding unskilled labour)	4.4
Education, Medical Officers etc.	4.4
Mining, quarrying, brickwork. etc.	2.8
Wholesale and retail	2.4
Forestry and Fishing	1.8
Other occupations	1.2

i. Enumeration of African Employees in Uganda. East African Statistical Department. June 1951.

T A B L E XIV. B.

Buganda

Occupation of Labour Force by Tribe[i]
at 30th. September 1950.

Scheduled Occupations	Ganda	Belgian Territories	Western Prov.	West Nile	Eastern Prov.	Northern Prov.	Others	Tot
Agriculture	1496	9180	2221	3520	1276	113	1886	19
Construction	7004	2708	3768	695	853	1936	2530	19
African Local Government	3931	1633	1916	170	133	152	41	7
Manufacturing & Light Industry	2142	755	498	328	447	156	1248	5
Transport and Communication	1220	131	713	92	146	372	567	3
Protectorate Government[ii]	682	311	1084	237	172	378	290	3
Education, Medical	1476	498	646	57	130	111	225	3
Mining and Quarrying	933	597	481	91	327	169	516	3
Ginning[iii]	798	624	307	96	53	62	75	2
Wholesale and Retail	875	215	249	53	62	29	226	1
Forestry and Fishing	423	328	255	11	89	13	102	1
Other Occupations	205	63	236	5	3	10	310	
Totals	21185	17043	12374	5355	3691	3501	8116	71
% Labour Force	29.7	23.9	17.4	7.5	5.2	4.9	11.3	

i. East African Statistical Department. 1951.

ii. Excluding unskilled labour.

iii. Out of season.

immigrants into other occupations. That Banyaruanda immigrants are concentrated on Buganda was accepted. But not all immigrants remained in Baganda employment. There are grounds for believing that an increasing number of these people settled in Buganda, either permanently or for considerable periods, finding that to become primary producers was more profitable and more to their liking than working for others.[i]

It appeared, therefore, as though the original labour stream was turning into a tribal migration. It is difficult to produce firm evidence for this but the following figures suggest the trend. A comparison of 1931 and 1948 Census figures for Buganda shows:-

Buganda Province.. increase of ... 49.6%
Baganda..... increase of ... 13.7%
Other tribes..... increase of ...285.5%
Baganda..... 1948 = 855,362
Other tribes... 1948 = 441,339 including 206,342 Banyaruanda.

In 1948 the proportion of non-Baganda males to non-Baganda females had fallen in every saza of Buganda indicating that immigrants were bringing their families to a much greater extent than formerly.

The heaviest demand for labour continued to come from Buganda and Busoga, in both districts for the industrial and commercial undertakings, public works etc. which largely

i. Medical Department. Annual Report. 1946. and Table XIV. A. and B.

T A B L E XV.

Reported Movement of Labour To and From North West 1939 - 1946[i]

I. Uganda Natives

Year	From West Nile to other parts of Protectorate	Returning to West Nile from other parts of Protectorate
1939	5,411	6,883
1940	6,943	4,170
1941	8,753	7,963
1942	5,962	9,488
1943	2,545	6,054
1944	4,089	4,693
1945	5,182	6,853
1946	7,803	8,327

II. Congo and Sudan Natives

Year	To Uganda	From Uganda
1939	5,046	5,150
1940	5,517	8,051
1941	3,143	3,291
1942	3,449	2,266
1943	1,560	2,134
1944	2,342	1,745
1945	3,548	2,405
1946	3,335	2,810

i. Labour Department. Annual Report. 1946.

used contract labour[i] and also in Buganda for the continued production of economic crops, particularly cotton and coffee. In the Eastern Province this demand was met by the steadily increasing population which, under conditions of persistent peasant farming exerted increasing pressure on the land and for which the existing industrial undertakings, and those proposed in the vicinity of Jinja, offered a much needed outlet and an opportunity to earn adequate wages.

While the general cry continued for increased labour a note of warning appears in a discussion[ii] on proposed mechanisation in Teso, where it is stated that, as little cultivable land remains unoccupied there is no certainty that labour displaced by tractor power would find useful occupation elsewhere. It is well to remember that Teso, with an enthusiastic and enterprising population has seized upon every new development offered by Western agriculture. In consequence the ravages of soil erosion were first recognised in this district and now in the event of increased efficiency in agricultural methods, possible over-population is forecast. It appears as if the period of purely peasant production, dependent on family labour is at an end, and that the next decade will see a change in outlook and an absorption of surplus population by industrial expansion. Up till now the only surplus population available has been seasonal migrant labour because peasant production demands an exceedingly high

i. Table XV. page.177.
ii. Department of Agriculture. Annual Report. 1949.

ratio of manpower to output. In Buganda, an area of potential production but comparatively static population the labour shortage had to be made up by immigrant labour. But the increasing population in this Province, (though here the recent increase is the result of permanent migration), will also create a condition of overpopulation in the event of increased labour efficiency plus the establishment of mechanisation without increased production.

But dependence on a migrant labour force has distinct disadvantages and though, up to the present, the movement of labour from areas of low to areas of high agricultural potential has helped to cement the economic union of the Protectorate, future development must depend on a more fixed force which would encourage the acquisition of skills, and the attainment of greater general efficiency, and would allow the growth of true communities in commercial and industrial areas where the labourer can enjoy the benefits and responsibilities of family life. Increased communications, extensions of commercial development to all parts of the Protectorate and the supply of adequate and easily transmissible power from Owen Falls should make labour fixation a firm possibility. It is interesting to find that a recent suggestion[1] envisages a greater degree of population concentration which would result in the desertion of the countryside in favour of the centres where a stable labour force with an organised social life could be established and where a market would be provided for agricultural

1. P. de Briey. International Labour Review. May 1951.

produce.

But this would involve the industrialisation and mechanisation of agriculture; a revolution which would demand as a pre-requisite a labour force of greatly increased skill and reliability and in addition the availability of capital.

CHAPTER V.

POPULATION CHANGE

Part I.

Introduction

Consideration has been given in the last three chapters to the general development of the land resources of the Protectorate in the last fifty years. The chronological survey of production was followed by studies of the two major problems of disease and labour, the one mainly influencing population numbers and the other population movement.

In the present chapter population change during the period is analysed against the background of the main features of development in an attempt to appreciate to what extent geographical factors have influenced the change in the size and location of the populations of districts and of the Protectorate. As the lack of adequate material[i] prevents a purely statistical analysis of population change the subject is considered synthetically; development is assessed as involving land and people; population is accepted as itself an integral part of the total environment of the country, as an element which has the power to influence evolution as well as to be affected by it.[ii]

Note: Statistical Material is presented in Appendix II Population Maps. Maps 14 to 25.

i. See Introduction.

ii. These two methods are not suggested as alternatives; they should be complementary but in a geographical study the synthetic approach can stand alone, the statistical can not.

Part II.

1900 - 1911.

In this first period the concern of the Administration was first and foremost with matters political. The necessity to provide the country with a stable government, to consolidate the central areas, control the marginal zones and review the current Protectorate boundaries placed on the Colonial Government a burden which heavily taxed its available resources. In consequence, economic ans social matters took second place and although important progress was made in both fields it was not the result of an all-out onslaught on even the most glaring problems posed by existing condifions. Cotton was established as the prime economic crop and efforts were directed to ensure the maximum production and export by concentration on problems of cultivation, labour supply and transport. This fact dominated the economic field and all other activities were overshadowed by its importance. The social services were represented by the Medical Authorities (education was the responsibility of the various missions) on whom was thrust the disastrous sleeping sickness epidemic, concern over which coloured both their methods and their reports. The foregoing trends are reflected in population change. In the Protectorate generally stabilisation followed political security with slight movements towards areas of maximum economic production but the presence of epidemic disease and famine resulted in considerable change in numbers and distribution of the population along

the northern shore area of Lake Victoria.

The distribution and density of population in 1900, as estimated by Johnston, is described in Chapter I[i] and the record of population change in the first decade of the century is one either of a static population or, more probably one which actually decreased under the first impact of British rule. In 1900 it was estimated[ii] that half the population of the whole Protectorate (total approximately 4,000,000) was concentrated in Buganda, Busoga and North Kavirondo (now Mbale district) indicating that this area constituted the most important section of the country. A clear distinction was drawn between Buganda and the Eastern Province districts by the Special Commissioner in 1901 "It is doubtful whether the native population is on the increase at the present time but on the whole I would say that it was decidedly on the increase in the Eastern and Nile Provinces."[iii] He further states that in Buganda, Bunyoro, Toro and Ankole the population is on the whole stationary, decreasing slightly in Buganda and increasing slightly in the other three districts. This statement, though an estimate, was doubtless framed from all available evidence and it gains in strength on account of its being concerned with districts under fairly close administration and for which records were easily available even if these were oral only. The Buganda

i. Chapter I. Part II, page.21. and Map 14.

ii. Africa. No.6. 1900. Preliminary Report by Her Majesty's Special Commissioner on the Protectorate of Uganda.

iii. Africa. No.7. 1901. Report by His Majesty's Special Commissioner on the Protectorate of Uganda.

decrease was explained by the normally low and diminishing fertility of Baganda women[1] and the fact that for the preceding century Baganda men had been in the habit of taking wives, by raiding, from Busoga, Bunyoro, Toro and Ankole, a habit which perforce had ceased with the establishment of British control. Reference is made in the same report to the diminution of the birth-rate by the substitution of monogamy for polygamy under the influence of Christian missionaries, but it seems unlikely that this effect was serious or that the trend would have become apparent in the birth-rate as early as 1901. But this problem continued to worry the authorities and the consolidation of the Hut Tax and Poll Tax into a single Rs5 Poll Tax in 1909 had behind it a hope that the abolition of the Hut Tax would check the growing disinclination to marriage among Baganda which was causing considerable alarm.

Johnston's optimistic comment on the Eastern Province population was quickly refuted by a series of disasters which succeeded in cancelling out any increase which could have resulted from the prevailing high birth-rates. Famine was an ever-present threat in this zone where, in good years, quite adequate food supplies were produced for the thriving population but where the yearly variation of rainfall distribution and amount could impose an impossible strain on the methods of agricultural production. In the broad sense the district of Busoga must be accepted as a marginal region under peasant farming; the people

1. Chapter III. Part I. page.133.

were prepared to accept the balance of severe checks to population increase against a permanently high birth-rate.

In 1908 the Governor reported that districts of Busoga had suffered seriously in recent famines: so that porters were too weak to carry more than half the normal weight of baggage.[i] This state of famine continued until 1909 and in all 10,000 people were estimated to have died while large numbers must have been rendered inefficient, greatly weakened and more liable to further disease.

Both famine and disease must have been responsible for high death-rates in the years prior to European intervention and the mere establishment of British administration was not sufficient immediately to eradicate these two major evils in the same manner as slave raiding and inter-tribal warfare had been stamped out. As far as can be judged it was in the first years of this administration that the richest parts of the Protectorate underwent the most devastating epidemic ever recorded, that of sleeping sickness in the years 1900 - 1906.[ii] The introduction of this disease into the country has been attributed to increased means of communication and ease of transport especially from regions of the Congo and German East Africa. Incidence of the disease was confined to the Lake Victoria shores. The figure of 200,000 deaths reported between 1900 and 1906 reflects not only the deadly nature of the disease but also the density of the

i. Colonial Reports. Miscellaneous. No.57. Uganda.1908.
ii. Chapter III. Part I. page.107. and Table III. page.108.

population that existed in the affected lakeside zone; apart from depopulation by death in this area the remainder of the people were moved as a control measure from the infected lake shore to the interior regions of Buganda and Busoga leaving the lacustrine districts denuded of population.[i]

Busoga, therefore, suffered not only from famines of various degrees of severity but also from the full effects of this epidemic; other diseases are not mentioned, not because of their absence but because their effects fade into insignificance in comparison with those of sleeping sickness. Apart from numerical change, insect-borne diseases played their part in controlling the distribution of population and it is reported that in the area of Busoga immediately east of Jinja the fertile country had been rendered almost devoid of inhabitants by the presence of the mbwa fly and associated onchocerciasis.[ii]

Population Distribution and Density 1911.

Comparison of Maps 14 (1900) and 16 (1911)
Appendix II. Table IV.

The 1911 census gave a total of 2,840,469 natives;[iii] this figure included the whole of Gondokoro district and the northern portion of Nimule district which were handed over to the Sudan on 31st. December 1913. It is generally agreed that the 1911 census is not reliable in detail and

i. Chapter III. Part I. page.111.
ii. Colonial Reports. Miscellaneous. No.57. Uganda. 1908.
iii. Appendix II. Table IV. Figures exclude Gondokoro and Nimule.

and therefore no attempt has been made to analyse county or tribal figures. Comparison with Johnston's estimates is made more difficult by the use in 1911 of broad administrative divisions which help to iron out differences in densities within the same district.

The most noticeable change is the absence of the distinctive zone of high density along the shores of Lake Victoria, particularly glaring in the small district of Entebbe with an average density of 8.2 per square mile. The districts of Masaka, Mengo, Entebbe, and Busoga which comprise the elephant grass zone were those worst affected by the sleeping sickness epidemic and Busoga had suffered in addition a series of crippling famines; the reduction to a general density of 24.2 per square mile, therefore, is probably reasonable. But the immediate lakeside areas were still almost devoid of population so that approximately two thirds of the area of the district carried the total remaining population; this would give central Busoga a density of approximately 37 persons per square mile. To a lesser extent the same argument holds good in Buganda where the lakeside areas, with the exception of small areas round Kampala and Entebbe,[1] were stripped of population by disease or eviction. By 1911 a small number of people were establishing themselves in the lake areas but most of the population of the district were grouped towards the northern edge of the elephant grass region with a more scantily populated fringe to the north and south: this band of heavier population coincided with

1. Chapter III. Part I. page.111.

the zone of major communications of the lake areas which were established at this time.

The districts of Toro and Bunyoro appear to show a slight decrease from densities ranging between 45 and 60 (1900) to average densities of 21 - 30 in 1911. This again is explained by the inevitable use of large administrative units as a basis of calculation; in both districts the higher densities round the centres of Masindi, Hoima and Fort Portal are levelled out by the inclusion of the almost uninhabited areas of north Bunyoro and the Ruwenzori district of Toro, There seems to be no evidence of a decrease in either area though equally there is none of a perceptible increase. Again Ankole shows a change from 20 - 30 and 46 - 60 persons per square mile to 43.4 in 1911; the truth would seem to be a fairly steady, small, increase, probably more among the non-Hamitic tribes than among the Bahima, who found it difficult to make adjustment to the economic organisation of the new Protectorate.

Kigezi is registered for the first time with a token figure of 100,000 persons and a resulting density of 51.2 per square mile. This figure is probably too low but the area was inaccessible and barely under full administration. At the same time the most heavily populated counties probably maintained a density of approximately 100 per square mile. This district only came under formal administration of the Protectorate in 1912 as a result of the Anglo-Belgian-German Boundary Convention of 1910 and it was some time before close

administration was established.

The north west boundaries of the Protectorate were also adjusted about this time, bringing the West Nile district within its purview and excluding part of Nimule and Gondokoro. Population figures for the West Nile and Gulu were 10 and 9.5 per square mile respectively, but these figures are probably mainly estimates as again neither district was under close administration. Populations followed a mainly shifting system of cultivation and villages were widely scattered, their location depending on individual features of soil and vegetation and, within the valley of the Nile, on the availability of water supplies. Like Gulu, Chua and Karamoja remained fringe areas in regard to statistics and are probably shown fairly accurately with sparse populations.

Within the Kioga Basin populations appear to have increased considerably especially in the east in the districts of Teso and Bukedi (the present Mbale) where population densities had risen to 63.1 and 98.6 per square mile respectively. Even allowing for irregularities in the census and for boundary changes these figures show a great increase over the 1900 estimates. This increase appears justified when backed by the continual contention[1] that population was increasing in the Eastern Province especially in areas comparatively free of killing diseases (the Bagishu were reported as very healthy; venereal disease being very rare and sleeping

1. Africa. No.7. 1901. Report by H. M. Special Commissioner.

sickness unknown), where considerable space existed for expansion and where a loose tribal organisation[i] did not hamper expansion and movement within the area. The increase in population was accompanied by some increase in trading centres like Iganga and Mbale but these were mainly centres of Indian and Arab traders and were not primarily African settlements.[ii] As far as the native population was concerned the increase in their numbers consisted of an intensification of an agricultural population increasingly dependent on cotton as an economic crop. This stabilised existing population and even encouraged some of the Bagishu to move to the plain.[iii]

As far as can be judged then, it would appear that the first ten years were a period which over the north and west of the Protectorate represented little more than consolidation of administrative necessity. Neither population numbers nor distribution were affected greatly and though it seems likely that most of these areas showed a small increase in numbers there is no real evidence to support this contention.

In the lakeside areas and the Eastern Province the period was one of great change: in the former, one of the most fertile and hitherto most densely populated areas of the Protectorate the population was decimated by disease and famine and these events left in their train

i. Chapter I. Part II. page.25.
ii. See Chapter II. Part I. page.54.
iii. Colonial Reports. Miscellaneous. No.57. Uganda.

an enfeebled population, particularly in Buganda which was ridden with venereal disease and affected by sleeping sickness, with a consequent sharp decrease in population numbers. In the Eastern Province, outside Busoga, populations appeared to have increased in all areas despite the set-backs of disease and famine; apparently the combination of a reasonably virile people and the incentive of economic crop production increased the indigenous population and served to entice into the area fringe elements like some of the hill Bagishu; this movement does not seem to have been inspired by an actual shortage of labour as economic crops were developed within the framework of the existing agricultural organisation, the family or village unit. In none of these areas was the essential pattern of settlement changed but the general economic development and the improvement of communications encouraged a more general tendency to ease of movement, at least between contiguous areas.

The question of labour bears in a general way on population in that, in Buganda, where labour was always short the Baganda themselves soon became established employers of native labour for the lucrative cultivation of cotton.[i] Basoga, Banyoro and Batoro all moved into Buganda in small numbers, initially driven by tax requirements to work for non-native enterprises and later overspilling into work for the Baganda themselves. During the 1914 - 1918 war migrants from Budama, Bugishu, the Kavirondo Gulf area and Ankole all became native paid

i. Chapter IV. pages. 151-152.

labourers in Buganda, sometimes attracted by the better conditions and higher pay of the Central Province and sometimes driven out of their home areas by famine or other necessity. In the 1918 - 1919 famine the number of Bakedi coming into Buganda from the Bugweri county of Mbale increased very greatly.

The necessity for labour for public works and the natural unwillingness of the African to volunteer for contract labour forced Government to introduce the 'kasanvu'[i] system of compulsory labour which added to the forces stabilising population within provinces or even within districts by utilising local labour; but the system may also have been responsible for small movements within administrative areas.

Stabilisation and slight general increase seem, therefore, to be the characteristics of population change in the period except within the lakeside areas where population was diminished and in the northern section of the elephant grass zone where it increased by actual movement, voluntary in the case of much of the labour from surrounding areas and compulsory as a result of evictions from the sleeping sickness zones.

i. Chapter IV. page.152.

Part III.

1911 - 1931

These years cover two separate periods. The first of these (1911 - 1923) was one almost of stagnation in major development when the pressure of external events caused economic uncertainty and excessive calls on available labour, both skilled European and unskilled African, while the crippling famines and epidemics of 1918 - 1920 greatly reduced population numbers and efficiency. The second period consisted of recovery from these doldrums and a great increase in general production; this resulted in an increase in numbers and in movement of population both within and from without the boundaries of the Protectorate. The outlying districts of the Protectorate remained marginal, in respect of statistics and development, for resources continued to be concentrated mainly in the more easily accessible areas, but tentative experiments were made in these fringe areas whose potential resources were becoming a subject of speculation.

In the sphere of disease, the period 1911 - 1931 contained nothing comparable with the great sleeping sickness epidemic of 1900 - 1906 but disease continued to take considerable toll of the population by actual mortality and by general debility. Plague appeared to be a necessarily evil companion to increased cotton production and became endemic in the Eastern Province.[i]

i. Chapter III. page.124.

Generally, in the war period, there was a halt in the extension of medical services, curative and preventive, owing to the transfer of medical personnel to military employment.[i] The seriousness of the epidemic of cerebro-spinal meningitis in 1917 with its estimated death roll of 8,000 in Gulu, Kitgum and Arua alone was considered to be due to the abnormal collection and movements of natives for military purposes and to the shortage of medical staff.[ii] In the same year a smallpox epidemic was reported with a record of high mortality. The end of the war was co-incident with a severe famine and the effects of the influenza epidemic. Deaths from starvation in the Eastern and Northern Provinces in 1918 following the failure of three consecutive wet seasons were estimated at 4,419 in Busoga, Bukedi and Teso while 9,396 influenza deaths were recorded in the Eastern Province outside Busoga and nearly 3,000 in the Northern Province;[iii] in 1919 the estimated deaths from influenza numbered 25,000.[iv] At the same time smallpox and dysentery accounted for a considerable mortality in the thickly populated areas of the Eastern and Northern Provinces where the constitutions of the natives were undermined by the inadequate and unusual diet which was provided during the famine. District figures for deaths and births are given in Appendix II. Table III. and they show a decrease in indigenous population in nearly all these areas.

i. Table IX. page.157.
ii. Colonial Reports. Annual.Uganda.No.993. 1917 - 1918.
iii. Colonial Reports. Annual.Uganda.No.1054. 1918 - 1919.
iv. Colonial Reports. Annual.Uganda.No.1079. 1919 - 1920.

In Buganda no improvement in these figures is noticeable till 1920 when the recorded birth-rate exceeded the recorded death-rate. But whereas in Buganda the low natural increase was due to a low birth-rate, in the Eastern and Northern Provinces it was due to the severe checks of famine and killing disease. A decrease in the number of still births (1923)[i] and the position in Buganda in 1924 when the calculated birth-rate exceeded the calculated death-rate were both attributed to the great expansion of medical work by the staff of the Medical Department and to the establishment of a great many maternity centres by the various Missions.

After the effects of the war on the Protectorate the immediate post-war years were a time of consolidation and then of continuing constructive work which had been interrupted for the period of the emergency. The severe impact of the epidemics and famines which followed the war served to focus work on the social services and in 1926 it is reported that the public health of Uganda improved considerably in the last five years.[ii] Again, when famine occurred in 1927 it had been anticipated and the Government succeeded in distributing adequate famine relief, a task which was made easier by the improvement of methods of transport and by the closer administration of districts previously held somewhat loosely.

By 1931, therefore, the economy of the Protectorate

i. Colonial Reports. Annual. Uganda. No.1280. 1924.
ii. Colonial Reports. Annual. Uganda. No.1377. 1926.

appeared to be established on the basis of ever-expanding cotton production, whose development was concentrated in the favourable southern areas but with intended expansion into more remote parts of the country where development was forced to lag behind the fundamental improvement of transport services. The predominance of the Eastern Province over Buganda rested on more adequate transport and the consequent concentration of the efforts and resources of the Administration on the former Province. Cotton cultivation in the Eastern Province was largely self-sufficient but in Buganda was dependent on labour imported into the Protectorate, mainly from extra-territorial sources; the establishment of the labour stream from the south west was in response to the demand of Baganda cultivators for paid labourers for the cotton fields. Other labour requirements, centred in the southern areas of production and export were met from local sources, from seasonal workers from the Northern Province and to a lesser extent from the Banyaruanda immigrants. Food production, on a traditional subsistence basis had been maintained in association with the growth of economic crops but few attempts had been made in any area to improve or alter the system of farming or the basis of diet. Migration movements were small except for the seasonal type based on labour requirements and regional differences still tended to stabilise populations rather than encourage interchange. Famine and disease had continued to take great toll of the population, though by 1931 there was reason to hope that both these scourges were more firmly under control than in 1911. Famine

persisted in all 'marginal' areas of the Protectorate, particularly Busoga, parts of Mbale, Teso and Lango and diseases although not appearing in such violent epidemic form had been checked rather than prevented.

Trading centres developed in this period mainly as a result of economic progress and the urgent improvement of communications. Mention is made in 1913 of the 'considerable' accretion of population in the larger trading centres, but no figures are given. These trading centres were mainly in Buganda and the Eastern Province and their predominant population were Asians who were responsible for much of the trading in the Protectorate and especially for the marketing and ginning of cotton. No great increase in African urban dwellers is reported.

Population Distribution and Density[i] 1931.

Comparison of Maps 16.(1911) and 18. and 19.(1931).

By 1931 the census showed an increase of population in all districts except Lango, Bunyoro and Karamoja, (in Karamoja all figures must be regarded as mere estimates). An attempt was made to check the 1931 census figures by the number of actual poll tax payers but the only result was the impression that neither census figures nor vital statistics gave an entirely accurate picture of the true state of affairs.[ii] In particular, it must be remembered that migration movements would seriously affect the figures.

i. Census Returns 1931. Uganda Protectorate.
ii. Colonial Reports. Annual. Uganda. No.1601. 1931.

Immigrants would escape the payment of poll tax and births and deaths would not be registered, so that it is difficult to calculate what proportion is included in these various counts.

Map 18 and Map 19 show the 1931 population by densities based on census figures for districts and counties respectively and in Map 17, using the same figures, pereentage increases by districts are indicated. Allowances are made where possible for boundary adjustments and transfers of small areas from one county to another. Figures for the northern districts are probably the most unreliable but it is reasonable to suppose that the populations showed increases though it seems probable that these were slight. The Nilotic tribes of the north had the reputation of high fertility and virility but this was no doubt offset by high mortality from epidemic diseases and from famine, particularly in Lango and parts of Acholi. Lango actually shows a small decrease; this is unlikely as it was no harder hit than other Northern Province areas by famine or disease and it seems possible that the 1911 estimate is at fault; the district only came under full administration in 1909 and the 1911 figure cannot be taken as accurate. In these northern districts generally the records show very few natives belonging to tribes coming from distant parts of the Protectorate, such movements as existed obviously taking place between contiguous areas. Little significant movement from the area is recorded although temporary labour migration, especially to Buganda, is indicated by the presence there of 6,166 Alur and

1,905 Lugbara, of whom 7,727 were males and only 344 females.

Bunyoro is the only district other than Karamoja (apart from the questionable Lango) which shows a decrease. In the absence of conclusive evidence this trend must be accepted, and is explained by the actual prevalence of deaths over births, by the recorded high still-birth rate of 38.58 per 1,000 in 1922 and by an incredibly high infant mortality rate, for example, 544.93 per 1,000 in 1926.[1] This last figure seems ridiculous and it is difficult to judge if pronouncements of population trends in Bunyoro, made currently by officials, were based on actual observation over a period or by perusal of the published statistics quoted above, statistics which should be viewed with the greatest possible caution.

The very high increase in Mubende district may be possible but appears somewhat unlikely and may be accounted for by the change in local boundaries. For example, the Singo county of Mengo was formerly in Mubende and it is difficult to allow for these boundary changes; it is unlikely that the population of Mubende increased very greatly and it would be much more reasonable to suppose that the increase was comparable with the neighbouring counties of Mengo.

On the other hand the high percentage increase shown for the district of Kigezi probably represents the general trend despite the fact that the 1911 figure was an estimate

i. Colonial Reports. Annual, Uganda. No.1486. 1929.

and the 1931 figure also uncertain. But even if the percentage increase is not quite so high as shown it is certain that the small south west hill region, which was without the incentive of an economic crop or the encouragement of really adequate communications, and already carried a high population in a region dependent on subsistence agriculture and troubled by local difficulties in water supply, nevertheless increased very considerably, unhampered by severe famine or serious epidemic disease. The standard of life was doubtless very low but primitive methods of soil conservation and great energy and application to work allowed these people to support a population calculated at 175 per square mile in the counties of Rukiga and Ndorwa.

The grassland area of Ankole shows a low increase, this is justifiable, and is based on the small increase of pastoral Bahima, whose herds were beginning to suffer considerably from the increase in tsetse fly infestation, from the deterioration in pasture and the perpetual difficulties of water supply. Neither communications nor an economic crop were established and the Banyankole showed signs of moving into the more favoured districts of West Ankole, Toro, Masaka and even Mengo.

The elephant grass areas, with the exception of Mengo, all show a steady increase mostly due to actual increase and not to migration. Busoga, particularly, showed a great revival in the 1920's after the disastrous period

of famine and disease in the immediate post-war years.[i]

The more limited increase in Mengo is in contrast to regions of similar environment in the Lake Victoria areas[ii] and in general these figures are a fair reflection of the slow rate of natural increase of the Baganda and, thus far, of the small effect of recorded migration on the district as a whole. The Central District (Mbale) shows a moderate increase but it was probably more than recorded and here again boundary changes may have served to mask the actual increase. The low recorded increase shown in Teso is surprising and no justification is offered in the Reports which show Teso, with its willing, enthusiastic inhabitants and lack of restricting tribal organisation to have made very great strides and, in spite of the fact that it was probably quite seriously affected by famine though not so hard hit by disease. Also the low population of the two north eastern counties, Amuria and Usuku lying on the borders of Karamoja and presenting very marginal conditions is probably partly responsible for the overall low increase and, in addition, the population of these counties was possibly over estimated in 1911.

Map 19 which shows the distribution of population in 1931 mainly by counties gives some indication of the population grouping; a band of heavy density along the shores of Lake Victoria (approximately the elephant grass

i. Appendix II. Table III.

ii. Bunyoro can be counted as a favourable elephant grass area. See Chapter VII. page.2 .

region) with a break in South Busoga where, in the area of open forest, sleeping sickness controls prevented the intensive resettlement of the region. The prevalence or danger of sleeping sickness in other areas[i] also served to keep population at a low level. A broad zone of low densities (11 - 45) occurred in the north and east through the western part of the Kioga Basin and south into the grassland areas. The middle densities are represented in the east of the Kioga Basin, (in Teso, Mbale and Busoga), in West Ankole where increased rainfall along with an increase in the agricultural Bairu and overflow from Kigezi are responsible for the relatively high population, and also in the West Nile where population again appeared to respond to climatic and water supply conditions and was mainly concentrated in the West Nile highlands. High densities (150 - 200) were found in the Ndorwa and Rukiga counties of Kigezi and in Busoga and Mbale where cotton and coffee growing and marketing resulted in a concentration of population. The very high density of South Bugishu, shown in the statistical map is probably partly explained by many boundary changes in the Central District and this concentration of population should be spread into North Bugishu. Nevertheless, Bugishu was the only area where pressure of population, i.e. land shortage, encouraged about 7,500 Bagishu to move out into lightly populated areas of Kyagwe county in Mengo.[ii] Again the elephant grass area shows its attraction for population and where this is not forthcoming from indigenous

i. See Map 11.

ii. Thomas and Scott. Uganda. page.276.

sources the gap is filled by natives from other districts; unlike the labour streams from the south west or from the Northern Province these Bagishu came to Kyagwe, not as labourers but to settle down and pursue their peasant agriculture in land that formerly had been regarded as the property of the Baganda.

During this period, 1911 - 1931, population trends were affected by reasonably high birth-rates in all Provinces other than Buganda, probably a high infant mortality rate, considerable diminution by deaths due to catastrophic famine and epidemic and endemic diseases and little effective migration. In Buganda the low birth-rate was reflected in slight natural increase although famine had less significance in this region, at least in the lakeside areas, and migration probably had maximum effects.

The distribution and movements of population were influenced profoundly by the development of cotton production in the Protectorate, a production which was concentrated early in Buganda and, more particularly, in the Eastern Province. In the former areas the necessity for labour for cotton growing and for the marketing and transport of the crop set up the demand for extra-provincial labour supplied mainly by Banyaruanda and West Nile natives. In the latter, profitable cotton production appears to have been the incentive to a greatly increased fixed agricultural population determined to intensify their use of the region so as to remain self sufficient in food stuffs and yet plant greater and greater acreages

of cotton. The vigorous population of the cotton and coffee growing areas of the Eastern Province outstripped those of all regions except that of Kigezi where the local population was increasing steadily: a small vigorous self sufficient community.[i]

It was said in 1934,[ii] (but speaking of the previous decade), "Conditions in Uganda, therefore are not generally favourable to redistributions of the population whether in the form of mass movements from one area to another or of large concentrations in the more extensively developed centres." Cultural and dietary differences acted as deterrents to inter-regional migrations and the fundamental desire of the African was to remain a peasant cultivator. So long as land was available for the continuance of a farming economy and short term paid labour projects in the districts offered the chance of earning the money necessary for payment of taxes there were unlikely to be extensive movements of population within the Protectorate. Nevertheless by 1931 the heterogeneous collection of tribal units which were gathered together under the administration of the Protectorate in 1894 and consolidated thereafter were showing signs of becoming in some measure interdependent, though this first stage is characterised by the political predominance of Buganda and the economic predominance of the Eastern Province, to the extent that men and materials were concentrated in these areas resulting in the one

i. See Chapter VI. page.221. et seq.
ii. Thomas and Scott. Uganda. page.275.

case in the growth of superior-minded Baganda utterly dependent on imported labour for the development of their main cash crop and for the establishment and maintenance of adequate communications and, in the other, in the creation of a steadily increasing community of peasant cultivators dependent, not on other African labour, but on Indian merchants for the processing and disposal of the main economic product. Both these areas were dependent on the guidance and financial assistance of the Colonial Government. In the first stages, encouragement of cash products by the Government, though it permitted the retention of systems of peasant agriculture, demanded increased labour, because of the low output of African workers; these additional labourers had to be produced by a greatly increased indigenous population or by importing labour from districts where pressure on available workers was not yet acute.

Population thus showed uncertain numerical fluctuations and little movement till 1920 but in the period from 1920 to 1931 numbers and production both increased, unequally in some areas such as Buganda where imported workers made up the labour deficiency.

Part IV.

1931 - 1948.

Population change in this period was, in many ways, less spectacular than in former years. It was influenced by the increasing ability of those responsible to mitigate the alarming effects of still-prevalent disease and famine so that the great fluctuations in numbers, due to deaths from 'natural' catastrophies are non-existent and all numerical change is much more gradual though none the less pronounced.

The slump of the early thirties affected the economically advanced sections of the Protectorate most severely, and thus the remaining areas by loss of Revenue and restriction of services. After this set-back expansion of economic crops proceeded apace, with consequent demands for labour in the main producing areas (from outlying districts and extra territorial sources) and for great improvement in transport facilities. Mobility of sections of the population was thus made necessary and possible with consequent increased distribution and incidence of selected diseases (for exsmple, relapsing fever and venereal diseases) to counterbalance increased control of some diseases of direct transmission (for example, plague and smallpox).

Continued expansion in the production of economic crops, with dependence on sub-efficient labour and increased human and stock population consequent on control

of some of the killing diseases focussed attention on problems of future development including conservation of resources, provision for an increasing population and improvement in general standards of nutrition and efficiency. The circumstances of the 1939 - 1945 war speeded rather than retarded the tackling of these various difficulties to which had to be added control of tsetse infestation in large areas of the Protectorate.

In response to these demands and opportunities population increased in nearly every district, though the pace varied greatly from area to area. The great emphasis on the social services reduced both general death rates and the existent high level of maternal and infant mortality, but statistical evidence for this is not forthcoming,[i] as the following quotation will show: "The accuracy of the figures for deaths and births supplied by native chiefs is, for obvious reasons, doubtful, though the margin of error can be regarded as fairly constant in the same district. Nevertheless the necessity for some adjustment of the figures became apparent in recent years and it was effected in some estimates by multiplying the number of taxpayers by an arbitrary figure judged to be approximately correct for the 'family factor'. This factor necessarily varied in differing districts so the usefulness of the vital statistics collected is very problematical. No regular records are kept of fluctuations of population due to migration."[ii] The penultimate sentence contains the core

i. Colonial Reports. Annual. Uganda. No. 1645. 1932.
ii. Medical Department. Annual Report. 1946.

of the matter. Even in his caution the Director of Medical Services goes too far in assuming that the margin of error in returns is constant in any one district. Most of Uganda is now administered under the Buganda system of appointed, not hereditary, chiefs so that both Chiefs and Native Administration clerks are liable to transfer to other districts and the compilation of returns placed in new hands.

But all the evidence goes to show that population was increasing and as venereal disease continued to check fertility, especially in Buganda and neighbouring districts this increase must be attributed to a general improvement in health in addition to the control of major epidemics. If figures are to be accepted as a guide there was a slight reversal of the general trend in 1942 when the vital statistics showed an increase of deaths over births in Mengo, Busoga and Ankole, probably in part due to the absence of young men on military service.[i] But the curve of total population continued upwards despite severe famines in 1942, 1943 and 1944. In the Northern and Eastern Provinces it was considered that during these years, climatic conditions were exceptional and food shortages inevitable but in Buganda the recurrent near-famines of the period were accepted as an indication that food production was inadequate because too great a proportion of cropped land was under cash crops.

Dietary deficiency with its severe effects on health

i. Medical Department. Annual Report. 1942.

and efficiency was a result of inadequate as well as inappropriate diet, and was common in areas where population pressure on the land had reduced both size of holdings and yields beyond the economic minimum. Populations from these over-crowded areas such as Bugishu and parts of Kyadondo tended to move outwards to bring more marginal land into cultivation, provided this movement was not prohibited by the presence of tsetse and the absence of water supplies.

In most areas, however, population tended to concentrate and not to disperse. Populations had gained an increased mobility, cattle owners moved out of tsetse infested areas, south west labour migration showed signs of becoming a tribal migration, directed movement was established under planned concentration of settlement (for water supply, defence against tsetse and centralisation of administrative and social services), and even the dispersal referred to above was restricted to movement to the fringes of the over-populated areas. The first official experiment in directed re-settlement of people from an over-populated area was started in 1946.[i]

Concentration was thus the keynote of population movement. In areas of high production, the elephant grass zone of Buganda and Busoga, uniform high densities were established by an increase in indigenous population supplemented by considerable influx of other tribes, attracted by the prosperity of the region. Within the

i. See Chapter VI. page.221.

more marginal areas the formerly widely scattered population distribution was transformed, by choice and necessity into small areas of high density, separated by large tracts of uninhabited territory. The problem was how the people of the Northern Province were going to adapt their social system and agricultural economy in order to reap the full advantage of political and economic progress. It was clear that they must concentrate population at the focal points of their social services.[i]

Concentration was carried a stage further in the increase of native populations in urban areas. At the end of the war, movement towards the towns became more pronounced and there is recorded[ii] a tendency for a small but increasing number of Africans to offer themselves, almost permanently, on an unwritten monthly contract, for paid employment in larger non-native undertakings especially in or near the urban areas. Many employers welcomed and encouraged this type of labour in preference to the seasonal worker; this led to an increase in settlement under unsatisfactory and insanitary conditions around the boundaries of the larger townships; among other problems the steadily increasing prevalence of typhoid in the Mengo district is attributed to this situation.[iii] The trend is significant in that it is the first time that Africans appeared to find a greater attraction in the wages offered by employing firms than in the chance of owning

i. Native Administration. Provincial Reports. 1947.
ii. Labour Department. Annual Report. 1947.
iii. Medical Department. Annual Report. 1948.

and working land in the tribal area; the great stabilising power of peasant attachment to the land seemed to be breaking down, though as yet only in isolated instances.

Population Distribution and Density 1948.

Comparison of Maps 19, 21 and 23.

The 1948 census figures[i] present the first really reliable picture of population distribution in the Protectorate but even this report is not without flaws as the figures for Bunyoro district are not included; total figures are given for Bunyoro, these being estimated from the Sample Census returns as the majority of the General Census forms had been lost in transit.[ii] But in the main these returns can be accepted as accurate and they will doubtless become the starting point from which population studies of the Protectorate can be made.

The main feature of population distribution consists of areas of heavy density (over 100 per square mile) in the south west hills region, the shores of Lake Victoria (with the exception of South Busoga), the eastern part of the Lake Kioga Basin with the slopes of Mount Elgon and a small area in the West Nile highlands. Associated with these regions are small areas of great density, for example the Ndorwa county of Kigezi and the Central Bugishu county of Mbale, both with population densities of over 300 per square mile. Areas of medium density (approximately 45 - 100)

i. African Population of the Uganda Protectorate. East African Statistical Department. 1950.

ii. Ibid. page.47.

fringe these highly populated regions, in the west extending north to the high plateau of Toro and the slopes of Ruwenzori, in the east to the northern areas of the Kioga Basin in the districts of Teso and Lango and in the main area of the West Nile highlands, west of the escarpment. A zone of low population density (20 - 45) extends from the Ankole grasslands through the western Kioga Basin to the watershed areas of Acholi and even these low densities fade out to areas of great population scarcity in large tracts of tsetse-infested Ankole and much of the Northern Province and Karamoja, where the presence of a persistently nomadic population explains its treatment as a district and not on a county basis.

It is noteworthy that these population zones can be correlated generally with rainfall amounts and regimes and with the presence of tsetse flies. Dense populations occupy areas which receive an average rainfall of over forty six inches per annum and are free of tsetse infestation: the rainfall itself is closely associated with the location of Lake Victoria and the fringing highlands, and volcanic soils are present in the areas of highest densities. The areas of medium density are found in regions either free of tsetse or with an adequate rainfall, the eastern areas with a marginal rainfall of approximately forty inches per annum belong to the former category and the western areas to the latter. Where low rainfall coincides with tsetse infestation populations are sparse, as for example in the western Kioga Basin, in southern Ankole and

in much of the Northern Province and Karamoja.

Maps 20 and 21 show the percentage increase of population between 1931 and 1948 but, owing to the doubts cast on the 1931 figures, these calculations must be accepted with some caution; in certain areas of Busoga and Toro boundary changes have made fair comparison difficult[i] and the absence of county figures for the Northern Province, Karamoja and Bunyoro detracts from the value of the map as a whole: other district figures indicate reported trends. All these calculations are perforce based on total figures; the tribal analysis in the 1931 Census Report is open to even more doubt than are the total figures and therefore no real basis exists for comparison. It is quite certain, however, that there were much greater numbers of non-indigenous natives in the Protectorate in 1948 than were present in 1931 and further, that a number of these immigrants were settled in Buganda and the south west of the Western Province. In 1948 Banyaruanda comprised 5.9% of the total population of the Protectorate, 9.5% of the population of Mengo, 20% of that of Masaka and 24% of that of Kigezi. The sex discrepancy was 44,371 excess males, but this discrepancy was noticeable only in Mengo and Masaka, the great labour centres.

Also in Mengo there were considerable numbers of Northern Province tribes; for example, 9,382 Alur (6,460 males and 2,922 females) and 1,356 Lugbara

i. Appendix II. Tables VII. and VIII.

(1,216 males and 140 females). The great preponderance of West Nile males in the southern area emphasises the seasonal nature of this labour movement. On the other hand 94% of the Baganda were found within the confines of Buganda and of the remaining 6% half were in the neighbouring districts of Busoga and Ankole. As yet the indigenous lacustrine Bantu show little tendency to change their habitat, unless forced by necessity, while the Northern Province Nilotics engage in seasonal but not permanent migration.

This brief analysis of population change suggests that though the composition of the population may alter, the major environmental factors exert a strong control in location, first in the broad divisions of population density, for example in the lands bordering the northern shore of Lake Victoria which, though stripped of inhabitants at the beginning of the century, now support a population equal to or surpassing that calculated by Johnston in 1900, (though locally the presence of tsetse flies has prevented revival in South Busoga) and second in details of distribution as shown by the pattern of settlement in Lango, where lack of available water restricts village siting.

Part V.

Conclusion.

As suggested in the Introduction the three main periods into which the half century has been divided in this Chapter can be correlated with the divisions used in Chapter II which more truly represent the main stages in the development both of land and population in Uganda.

The essentially experimental period up till about 1920 represents a time of administrative consolidation, economic beginnings and overwhelming social difficulties taken in conjunction with populations which suffered great fluctuations in numbers but remained basically stabilised within the 1900 tribal limits.

The 1920's and 1930's were characterised by early variation in economic stability, followed by a consolidation of economic production dependent on the increasing cultivation of cash crops and also by the visible results of medical control. Together, these two factors were linked to populations which showed considerable increase, particularly in the Eastern Province area of economic production and in the Kigezi region of subsistence agriculture, and were responsible for movements of seasonal labour, from the short grass areas of the north and from the over-crowded regions of Ruanda Urundi.

The third span of development, from 1939 - 1950 revealed the possible results of the differential speeds

of increase of production on the one hand and of population on the other. Development of land, though hampered by environmental difficulties was directed towards conservation of resources, together with greater and more varied production of primary products. Despite this action, increasing population outstripped production in certain areas causing local conditions of over-population, relieved by the movement of some farmers to neighbouring agricultural areas or by the diversion of surplus workers into non-native agricultural or industrial undertakings. Meanwhile, areas of successful economic production continued to exercise an ever-increasing attraction for non-indigenous natives whose presence, as settlers or labourers, further increased the population density in these zones. Population has shown a steady trend towards greater mobility and yet also towards greater concentration comparable with the tendency in general development to concentrate effort on specific problems of increased production as seen within the framework of the total environment of the Protectorate.

Surveying the fifty years of fluctuating populations throughout the whole Protectorate, Thomas and Scott[1] would appear to be wrong when they suggest, as a matter of principle, that conditions in Uganda are not favourable to the redistributions of population. The significance of these fluctuations is in the movement of populations, despite the great stabilising forces of peasant devotion

i. Thomas and Scott. Uganda. page.275.
See also Chapter V. Part III. page.204.

to land, tribal traditions and regional diets. The clearing of the lakeside areas on account of sleeping sickness, the great losses of population in the Eastern Province due to famine, the movement of Bagishu to the empty lakeside areas of Kyagwe, the influx of extra-territorial natives, the seasonal movement of Northern Province labourers and the slow steady drain to the rapidly growing urban areas, all of these are trends of great significance, influenced by and in their turn an influence on the successive phases in the development of natural resources.

The present distribution of population would appear to be restricted by the infestation of one third of the Protectorate by tsetse flies at the same time as population pressure in areas of high production impels a thrust outwards towards the fringe zones while there is a scarcity of population in the well-favoured elephant grass area of Bunyoro which has become a matter of concern to chiefs and people alike. This suggests that there are problems of population distribution which are not to be explained by any single localising factor. Each stage of development has been marked by particular trends in population change, but these trends are the result, not only of the conditions of living of the various people in terms of subsistence and disease but, also, in some measure, of the discernible characteristics of mind and body, found in any group held together by the traditions of common origin or by the customs of similar environment.

CHAPTER VI.

THE CHANGING ENVIRONMENT

A Study in Over-Population.

The position in 1900 (as described in Chapter I) illustrated the balance attained between the potential of the physical conditions and the technical capabilities of the people. Stress has been laid on the fact that it was not an equilibrium achieved but a moment in the dynamic interaction of man and environment. The same must be true of 1950. Again the choice of date is somewhat arbitrary, in this case to take in the 1948 Population Census and the beginnings of implementation of the ten year Development Plan (1947 - 1956).

These fifty years cover the first concentrated attack on the section of Africa comprising the Uganda Protectorate by British Administration as the representative of West European civilisation. To the resources of men and materials available in Uganda the Colonial Government brought the whole experience of Europe in every field, political wisdom, medical knowledge and research, agricultural techniques, economic understanding but perhaps most important of all, initiative and capital without which every major scheme in Africa is bound to fail.

The record of this half century is thus that of the mixing of two stores of accumulated experience and the effect the combination has had on the 'face' of Uganda.

The great achievements of cotton introduction and expansion, of improved health and of increased population have each one of them brought to light the significant fact that tropical conditions present a particular field of study which must have its own techniques. The elements of geographical synthesis; for example, climate, soils and vegetation, are subject to rules of conduct profoundly different from those applicable in temperate areas.

In previous chapters the development has been outlined in terms of production and population and some of the major environmental difficulties such as soil erosion, the spread of tsetse and the difficulty of controlling 'environmental' diseases have been indicated.

How then has the environment altered in this period; superficially very considerably. Without any doubt there is much more land under cultivation than there was in 1900, both perennial and annual crops have increased and in all areas of high or increasing population densities, such as the Kyadondo county of Mengo, much of Central Busoga, Mbale, Teso and Kigezi the amount of land resting has been reduced correspondingly. These heavy population densities are still dependent mainly on peasant farming, the income from which is, in some cases, supplemented by the cash wages of members of the family who are engaged in paid work elsewhere. Population grouping has tended to become more compact (and the present tendency is to make it more so), in order to utilise fully the available water supplies, to make use of the limited social services, especially medical and educational facilities, and to

provide a defence against the advance of tsetse fly in affected areas. Concentration of settlement in this manner presupposes a vastly increased and much more efficient system of communications and transport. Map 2. shows the present network of roads connecting all parts of the Protectorate, and though rail facilities remain limited the greatly increased use of motor transport enables transport services for both passengers and freight to be run to every district all the year round. These roads are unmetalled, except in and near the main townships but maintenance of the 'murrum' surface is excellent both by Protectorate and Native Administrations. Greater facilities for movement have resulted in greater mobility of the population generally, quite apart from specific transfers of population in the case of labour migrations.

Air transport has made more difference to the Protectorate than is usually recognised. In regard to the location of the Protectorate, the key note in 1900 was isolation and, as has been shown, early development hinged on the supply of adequate communications to the coast. This still applies to freight movements but the position of the country astride one of the main African air routes has greatly increased its accessibility and has brought air transit custom to Entebbe and Kampala. But more important than this international position is the use made of internal air travel. There are small air fields in or near most of the district centres and the consequent shortening of lines of communications has done much to knit together the various districts and provinces.

Air survey is also used by various Departments such as Forestry, Geological Survey and Land Survey and Mines and is responsible for saving time in carrying out surveys necessary for development work. The plateau nature of the country is suited to airfield construction and to some extent provides reasonable flying conditions because of the lack of topographic and climatic obstacles. Especially in the heavily forested areas like the Katonga Valley, where penetration is difficult and slow, aerial survey has succeeded in overcoming what was a 'negative' area fifty years ago.

It appears as though there has been most change in the environment in the central districts of the country, in which economic development has been concentrated and which now show heavy densities of population. The startling exception to this trend is the south west hill district of Kigezi where great changes have taken place in the last forty years: Kigezi only came under Uganda Administration in 1912. This district will be surveyed in detail because it demonstrates most obviously some of the problems which face tropical countries dependent on peasant farming. The district, with a total area of 2,024 square miles is situated on the south west margins of the Protectorate and comprises a hill region of average height 7,000 feet, though its main characteristic is the dissection of the upland by steep-sided, flat-bottomed valleys, usually filled with papyrus swamp. The underlying rocks are mainly metamorphosed lake sediments of great thickness which weather to produce reddish brown loams. The top soils (barely a foot deep) are of good

structure, and lasting power, and not easily erodible, but the sub-soils, especially of the hillsides, are extremely acid so that it is particularly important to prevent erosion of the fertile top soil. The exception is the Bufumbira volcanic area where the lavas are potassic in contrast to the sodic lavas of Mount Elgon. This area is cultivable only when the crust is broken up and the stones piled in heaps. Unfortunately, the volcanic rocks are exceedingly porous which means that water supplies are almost unobtainable except round the edges of the area and the inhabitants must spend much time and energy to procure adequate water for domestic and stock requirements.[i]

The Bakiga, an agricultural people held their land tribally, a man owning as much as he could cultivate in a year plus the fallow land which he could prove he had cultivated previously, the limit of a resting period being normally taken as seven years. It was usual for each man to have several blocks of land, as different soils were suited to different crops; this resulted in fragmentation of holdings and plots, though all grazing land was held communally. The normal procedure was for people to live near water at the base of the hill slopes, cultivate the hillsides and use the hilltops and valley floors for grazing. The bare scars of cattle tracks running straight up the spurs of the fluted hills were a feature of the countryside. Cattle, sheep and goats

i. See Map. 10

were kept in small numbers but emphasis was on cultivation of peas, beans, sweet potatoes and millet. Most crops were grown twice a year but the main millet crop was planted in December or January and harvested about July.

In the 1912 Blue Book Returns Kigezi is registered with a total population of 100,000; by 1931 this had risen to 226,080 and by 1948 to 395,529,[i] an overall increase of 75% between 1931 and 1948 though individual counties show much higher figures.[ii] As suggested in the last chapter, the initial estimate for Kigezi was probably on the low side but even so the district has shown a tremendous increase in population in recent years, an increase which was bound to result in pressure on available land. The population practised subsistence farming until the introduction of nicotine tobacco and flax in the 1939 - 1945 war. No cash income was available, therefore, to eke out that obtained from the export to neighbouring districts of small quantities of grains and vegetables. Increase in population caused more intensive cultivation and whereas formerly tilling had been restricted to the lower slopes, under pressure the higher grazings on thin soils were brought under the hoe.

By 1945 the situation had become almost desperate; 34% of the total population of the district lived in an over-crowded area of 234 square miles in the neighbourhood of Kabale and the density of the most thickly populated

i. See Appendix II. Table IV.
ii. See Appendix II, Table VIII.

areas was calculated at 718 per square mile.[i] This gave a land area of approximately 4.45 acres per tax payer and this calculation includes swamps and rocky hillsides as well as land suitable for agriculture. On this allocation each family had to maintain a house, provide trees for building and fuel, graze an average of one cow and five sheep or goats in addition to growing sufficient food for themselves and possibly producing crops for sale. A survey[ii] was made in an attempt to assess the agricultural potentialities of this region which, as far as can be ascertained, has been cultivated only for about one hundred years, to assess the degree of exhaustion of these soils and to estimate the periods of cultivation and rest necessary to restore them . This was found to be very difficult because of the lack of agreement between peasants and minor chiefs on the history of the area.

It was finally recommended that land on slopes of 20° degrees and over should be retired from cultivation as being the only method by which the crumb structure could be restored, but as the area covered by these slopes equals more than 8.3% of the total land area this counsel of perfection cannot be followed at the present time. Contour stripping has been introduced, plots of 16 yards are allowed on 6° - 15° slopes and are reduced to 12 yards on slopes between 15° and 20° ; it is felt that slopes under 6° need no special conservation measures under Kigezi conditions. Bunds of 3' - 5' of grass or plot

i. Purseglove, J. W. Re-settlement in Kigezi, Uganda. Journal of African Administration. Volume III. No.I. January 1951.

ii. Department of Agriculture. Annual Report. July 1943 - June 1944.

refuse protect the strips from erosion and it is planned to rest one strip in three by a rotation of four years cultivation followed by two years rest. In the less densely populated areas true strip cropping has been introduced with alternate cultivated and resting strips; the latter are grazed and it is hoped to sow them down with temporary leys of grasses and clovers. Now, the hillsides appear to be terraced from bottom to top and women toil to the top of the hills to cultivate the highest terraces; settlements remain near the break of slope because of the convenience of water and communications, for roads are located along the valley sides.

Attention has also been given to swamp drainage. The Kasambya swamp was drained in 1942 and has since produced good crops and pasture. But the general level of the land appears to have dropped at a rate of ten feet in two years and, as reported in Chapter III,[i] swamp drainage can lead to an increase in disease. The two economic crops, nicotine tobacco and flax are grown quite widely on the small plots and are brought in to the factories at Kabale and Kisizi. Every effort, therefore, has been made to increase production, to alleviate overcrowding and to introduce conservation measures designed to maintain fertility. There can be no doubt that the District Team (District Commissioner, Agricultural Officer and Medical Officer) have made every effort under existent peasant conditions to increase the health and happiness of

i. Chapter III. page.120.

the indigenous population.

Yet all these efforts were not sufficient to provide for the increasing population and it was agreed to attempt a mass movement of people, an encouraged 'voluntary' resettlement project to an area on the Lake Edward escarpment (height about 4,000' or over) in North Kigezi. This is an area, previously devoid of settlement because of heavy forest, the presence of game and recently, of tsetse infestation. The success of the scheme depended on skilful propaganda by members of the District Team and various inducements were offered to those willing to move. The general arrangements were that the settlers would be fed and housed (in temporary grass huts) and would have poll tax remitted for two years. They were allowed to choose their own plots whose size was about 12 acres per family, (one wife and four children); 3 acres resting, 3 acres cultivated and 6 acres for a subsequent family increase. Implements, especially hoes, were distributed to the settlers, to be paid for out of the proceeds of crops, and successful economic crops have been groundnuts, sunflowers, maize and European potatoes. Experimental clearing is now being carried out so that cattle can be introduced as it is considered that, once cleared, the close settlement will prevent any re-infestation by tsetse.

This resettlement scheme is regarded as a great

triumph. Figures are given for the first four years.

Lake Edward Escarpment Resettlement Area.

Rukiga Ensya

Year	Number of Immigrants	Cost £
1946	1,508	2,185
1947	3,865	5,088
1948	4,629	5,877
1949	5,000	4,967
Total	15,002	£18,117

Certainly in comparison with similar schemes in Kenya the cost is amazingly low, the settlers are located in an area not too unlike their home region and because movement was voluntary, appear to be contented. Extensions of the area of resettlement have been scheduled in West Ankole, West Igara, Buhwezu and Bunyaruguru. Unorganised movement has also taken place from Kigezi into several of the counties of Ankole, especially Ishingiro and Mitoma. Yet, if the total increase of population in Kigezi district between 1931 and 1948 was 169,698, the average yearly increase over those 17 years was 1,000 and there is evidence that the rate of increase has been raised in the last few years. All this effort, therefore, has relieved the natural increase over the four years plus 10,000 people at the most. In order that the situation should be kept under control emigration would have to be continued, presumably into the neighbouring counties of Ankole, until

such time as population increase was cut down or production miraculously improved.

This experiment has been described in some detail because it illustrates the fundamental problem of environment and population which must face most African territories. Peasant production as such can only support population densities which range from approximately 170 per square mile to the 714 per square mile quoted above in the Kabale neighbourhood. The fact that every care and much experimentation has taken place in Kigezi indicates that the upper limit of density has been reached. If the land is to be preserved for future generations then, under the present systems of land tenure and utilisation, the critical density has been attained and any additional population will mean over-crowding and undoubted over-population: in other words, even with the current accepted standards of health and nutrition the environment will no longer be able to support the population living in it.

It is reasonable to suppose that, in view of the measures of disease control now in operation populations in other areas will also expand and create conditions similar to those found in Kigezi. Mixed farming, strip cropping, irrigation works and additional water supplies can all extend the area of cultivation and increase the level of production. But, as indicated in Kigezi, these aids to production must reach a limit beyond which the

utilisation of resources under present methods is no longer sufficient. The areas of resettlement in North Kigezi and West Ankole are almost certain to show over-population within a period of years and without further areas becoming available for expansion, living standards would drop and the whole situation of ill-health, malnutrition and depressed standards in evidence at the time of British intervention would be re-established: the wheel would have turned full circle. In his Foreword to the 1946 Development Plan the Governor wrote "Uganda is and must remain for the present at all events primarily a country of peasant agriculture."[i] Sir Philip Mitchell in a despatch to the Secretary of State dealing with the problem of the three East African territories wrote "the basic problem in all of them (East African Territories) is the same - namely, the need to adapt agricultural practice and economic policy to the requirements of an increasing population."[ii] And in the same despatch "small-scale family cultivation of land under tribal conditions of tenure and according to traditional African methods is unable, except in specially favourable conditions in certain relatively limited areas, to do more than provide a low standard of living, little above bare subsistence and then only in the absence of drought, flood or locusts; and cannot continue without destroying the land unless it takes the form of shifting cultivation."[iii] A key may be

i. A Development Plan for Uganda. 1946. page.IV.

ii. Sir Philip Mitchell. Land and Population in East Africa. Colonial Office Publication. 290. page.24. 1952.

iii. Ibid. page.21.

found in the aims of the Development Plan[1] itself in which the aim of development is to cause production in all its forms to increase at a greater rate than population, and since the greatest asset of Uganda is the large expanse of land and water which has not yet been brought into production, the fundamental problem divides itself into two parts, first how to increase the output per head of the African population, the second how to remove the handicaps which render large areas unused or unusable and to ascertain how those areas could be developed in the best interests of the inhabitants when there is more manpower available.

The increase in population is thus accepted as the inevitable consequence of improvement of health and general prospects, of the prevention of tribal wars and the avoidance of large scale famines, and of immigration from neighbouring areas. The question, as Worthington suggests, becomes one of resources and, as indicated at the beginning of this chapter the critical factor becomes that of technique. Most development in Uganda has, up to the present, been based on a harnessing of traditional methods to the problems of production. Modifications have been introduced, for example strip cropping as an anti-erosion measure, where these modifications could be inserted in the accepted pattern of production. Fundamentally self-subsistence agriculture is still practised on small plots whose size will decrease as population mounts.

That this has been wise development is undoubted.

1. A Development Plan for Uganda. 1946. page. 8.

Only now are technicians and administrators in a position to appreciate some of the problems posed by tropical development. The outline presented in Chapter II shows only too clearly that the introduction of ploughing, for example, without adequate experience and safeguards appeared to have in it the seeds of its own destruction and the conservatism of African producers may have been of great benefit in checking the pace, particularly in the early years. In the event, it was not till the middle and late 1930's that the fundamental problems of water supply, soil conservation and malnutrition were recognised and it is only in the last ten years that efforts have been made to deal with them.

This grappling with the environment has revealed some of its possibilities as well as some of its disadvantages. With eradication of tsetse and the provision of additional water supplies cattle rearing in the northern areas could become of paramount importance, producing cattle not only for home consumption but also for export. Again if the tsetse infested areas of South Busoga could be cleared this region could maintain a population equal in density to that of southern Buganda. The vast resources of the lakes and rivers of Uganda, which could provide fish as an additional and much needed article of diet, are greatly under developed at the moment and it seems likely that these rich fishing grounds can be tapped quite easily.[i] The use of Tororo rock phosphate with a small amount of nitrogen fertiliser has been found

i. A Development Plan for Uganda. 1946. pages.38 - 40.

to increase the yield of grain crops by 50%. All these on the credit side; on the debit, over crowding in Teso, Bugishu and Kigezi, where surplus populations have to be supported by the land without being able to contribute anything to production; the increased mobility of population which has undoubtedly contributed to the spread of tsetse and also of such scourges as venereal disease, and lastly the dependence of the country on migrant labour.

And yet, for all this, the full resources of Uganda offer great opportunities to its population if these resources are considered as a part of the whole environment, not to be treated in isolation but each as a part of the whole whose development must be integrated.

There appear to be two main lines of approach to this problem. The first must affect agricultural production and animal husbandry as the backbone of native life. The circumstances vary in different districts but generally land is held communally by the tribe and individuals are assured sufficient for their needs. In all cattle areas grazings are communal. This appears a recognition of the geographical factors which cause variations in the adequacy of grazings from year to year and further determine the location of watering places by the scarcity and ill-distribution of water. Present methods of extensive grazing could be converted into rotational grazing which could be organised as an anti-erosion measure as well as

producing infinitely improved pasture.

It appears inevitable that some re-organisation of cultivated plots must be the basis of agricultural improvement. It is often maintained that consolidation of plots, and checks to fragmentation would mean a revolution in land tenure. This theory appears to deny the evidence. Formerly land was held communally and shifting agriculture practised, in order to adjust primitive methods to the low fertility of tropical soils. There is every evidence that communal labour was accepted in agricultural communities and that concepts of individual land holdings have been fostered only in the last fifty years. The enthusiasm with which co-operative marketing schemes have been welcomed in all parts of the Protectorate is some indication of the basic acceptance of co-operation in productive enterprises. Surely it is not impossible to develope some scheme whereby land, at present under cultivation, can be grouped into units of an economic size in which experiments can be made in some degree of mechanisation in order to raise the output, not so much per acre, as per capita: at present it is the low production per head of population, a result of the employment of large quantities of relatively inefficient labour, which depresses the general standard of living.

The problem is much more complicated in Buganda, where under the 1900 Agreement peasants have been able to purchase mailo land which is assured to individual owners. But though the question seems more intractable in this Province it may well find within the existent system the

opportunities of a solution. Land, in time, will likely pass into the hands of the more prosperous Africans and be consolidated into estates whose size will allow that degree of mechanisation which should increase productivity without raising costs.

If these reforms can be initiated two concurrent difficulties arise. The first is fundamental to all development and concerns capital, without which successful production cannot be established. In the past, capital for development has come directly from the United Kingdom Treasury, either as a Treasury Grant[i] or in the form of money allocated for specific schemes under the Colonial Development and Welfare Act of 1945.[ii] In the future (with the exception of the schemes just mentioned) it must come from Uganda Revenue which is derived to a large extent from export taxes on cash crops.

The second difficulty arising from improved agricultural production is also intimately linked with the other line of approach to increased development. Any efforts towards increased mechanisation would merely accentuate the existent state of over-population unless some outlet for the surplus can be found.

Uganda has suffered gravely from her lack of adequate and efficient fuel. On the one hand inefficient wood fuel was utilised for railways and domestic consumption

i. Chapter II. Part II. page.61.

ii. Uganda's allocation for the period 1947 - 1956 is £2,500,000.

and while this source of supply caused great dissatisfaction to the users it also resulted in a decimation of the forest resources of the Protectorate thus destroying a most valuable asset in the form of first class mvule (mahogany) which was in much of the open forest of the country. Severe protective measures have now been undertaken and Native Administrations are being encouraged to establish plantations of softwood timber for the building needs of Africans, at the rate of approximately 100 acres per year.[i] Lack of fuel has meant lack of power as imported coal was both too expensive and too bulky to be an economic commodity.

It is only now that the great water resources of the Protectorate, for example, at Owen Falls on the Nile, are coming to be used for the generation of electric power, not only for Uganda but, it is planned, for much of East Africa. The great lake reservoirs, Victoria, Kioga, and Albert, the high rainfall of the fringing highlands and of the lake area and the position of the Falls at the exit from Lake Victoria have made possible a scheme for the regulation of the Nile waters for the benefit of Uganda, the Sudan and Egypt. Without discussing the scheme in detail the results must be considered. Power in a readily transmissable form opens up the possibility of industrialisation in Uganda. Small concerns have been established over the years, in order to process locally produced goods and though this movement was given impetus in the war years, no big industrial undertakings could be started

i. A Development Plan for Uganda. 1946. page.35.

because of the absence of adequate power. Electrical power from Owen Falls has been used in the Tororo Cement Works where local limestone is being utilised to make cement for the further works at the dam site. But the field is now open for much more extensive development, in particular a factory for making cotton goods is proposed at Jinja, a revolutionary step, as hitherto no cotton has been processed within the Protectorate.

A measure of industrialisation, using raw materials from mining and agriculture, would offer lucrative employment to African labour if, by improved standards of health and greater incentives this labour could be made efficient. In 1949 there were only 4,500 skilled Africans in employment[1] but this low figure is explained mainly by the lack of training facilities. That most Africans are well able to take advantage of training was shown in the 1939 - 1945 war when many members of the Forces became competent and skilled workmen. There is a wide field open for greatly increased numbers of skilled labour which could come, not from the ranks of half-starved immigrant labour but from the regions of high population where improved economic conditions have shown the benefits of a higher standard of living.

If development takes place along these lines the environment probably will show even greater change in the next fifty years than it has in the last half century.

i. Colonial Reports. Annual. Uganda. 1949. page.18.

A greatly improved standard of living and a basic security against the vagaries of climate can be won from the environment of the Protectorate by means of a pooling of the experience of European and African civilisation and by willing co-operation between brilliant initiative and honest hard work.

CHAPTER VII.

CONCLUSION

The fundamental geographical truth demonstrated by this survey is the essential inter-relationship of the various factors which together constitute what is called the 'total' environment. The term 'cultural landscape' probably approximates most closely to this concept but such a phrase is mainly concerned with the material alterations and additions which man has made to the physical environment. This term is of great importance in temperate areas, particularly in Europe and North America where the visible evidence of man's occupation is slow to fade and often persists for many centuries so that existent patterns of settlement or land tenure may be the clue to the long history of land utilisation. In tropical areas the nature of the environment itself precludes study of this type. The speed of vegetative growth, and the prolific nature of the vegetation in areas of high rainfall are sufficient to obliterate the marks of human occupancy; when these are combined with a tendency to construct buildings etc. of materials which themselves will decay very quickly it will be appreciated that the evidence of former occupation is often difficult to find. This point is stressed by Gourou[i] and by Dobby[ii] in tropical studies and an appreciation of its importance

i. Pierre Gourou. Les Pays Tropicaux.
ii. E. H. G. Dobby. South East Asia.

is an insurance against regarding tropical regions as being covered with 'virgin' forest or as lightly accepting the present apparently 'natural environment' as the index of land potential. A Uganda instance of this is given in the opinion of the Conservator of Forests on the present vegetation cover of Karamoja;[i] an important example is dealt with by Gillman[ii] in a description of what he calls 'cultivation steppe', a type of land utilisation found widely in African regions. This occurs on the margins of semi-humid areas where the marginal tall-grass-tree savanna has been reduced to an open treeless low grass steppe by the determination of cattle keeping cultivators to limit or destroy vegetation suitable for the breeding of tsetse which are such a constant menace to precious herds. Mountain rain forest can thus be transformed into grass-steppe. Withdrawal of population will not result in immediate or even ultimate regeneration[iii] and the altered environment may be accepted by future generations as 'natural'.

So it appears that the meaning given to this term 'environment' must be all-embracing. No valid division can be made between the physical and the human habitats particularly when considering environment as a background to development. The total result of physical and human forces acting together in any area at any particular time must be accepted as the medium within which further

i. Chapter I. Part I. page.17.

ii. C. Gillman. Problems of Land Utilisation in Tanganyika Territory. South African Geographical Journal. Volume.XX. April 1938.

iii. P. W. Richards. The Tropical Rainforest.

utilisation of the region must be studied. Failure to give sufficient weight to any of the component factors must deny the validity of the geographical approach in which the guiding principles are interactions and inter-relationships in time as well as in space.

"Une seule règle nous parait s'imposer et nous assurer du caractère géographique de notre effort: celle de ne jamais perdre de vue la solidarité de tous les faits et des toutes les évolutions, la solidarité aussi du passé et du présent on, si l'on préfère, du temps de l'espace."[i]

Only within the framework of this total conception is it possible to draw pertinent conclusions in respect of the various factors affecting population change. Despite the uncertainty over estimates of population and the opinion of Kuczynski[ii] that no clear trends are discernible in the East African populations, there appears to be undisputed evidence of certain well marked trends within the Uganda Protectorate during the last fifty years. In nearly all districts populations have increased in the aggregate though fluctuation rather than steady increase is the keynote to population change. The rate of population increase varies: a high level of indigenous increase occurs in the East Kioga Basin; a low indigenous increase in Buganda is supplemented by a high rate of

i. Pierre George. l'Introduction a l'étude géographique de la population du monde. page.10.

ii. Introduction. page VIII and Kuczynski. Demographic Survey of the British Empire. Volume II. 1948.

immigration in the lakeside areas; high indigenous increase and high immigration are characteristic of certain western areas of the West Nile and Kigezi while lower rates obtain in the central and northern districts. Only in Bunyoro is there any evidence for actual decrease of population; other areas which show apparent decreases (Map 21) are those where movement of population has taken place consequent on increased tsetse fly infestation. The general increase which has been well established in the last fifteen years suggests that the fertility of most of the indigenous tribes is high and that the present increase may gain in momentum as the checks to population are reduced. In the early years it appears as if the birth-rate was high in all areas except Buganda but that infantile and maternal mortality rates were also high, that the expectation of life was low and that great inroads were made on the population by the periodic catastrophies of epidemic disease or famine. Actual numbers therefore show an upward trend though the increase has not been steady but has been broken by many serious set-backs, particularly in the period to 1920. Dr. Albert Cook writing in 1918 states, "Those of us who have lived in Uganda for the last twenty years or more, have keenly realised the forces making for depopulation. It is even doubtful whether the dreadful ravages of the slave trade in Central African countries like Uganda, have accomplished more destruction than the epidemics of recent years."[i] And yet despite these depredations population numbers have

i. Sir Albert Cook. Uganda Memories. page 325.

increased.

Change involves distribution as well as density and considerable movements have taken place which include the addition by 1948 of approximately 300,000 Banyaruanda and associated tribes to the total population of the Protectorate. This tribal migration dwarfs all other changes by its magnitude but two small movements are of comparable interest; the movement away from areas of tsetse infestation and the migration of population from over-crowded areas such as Bugishu and Kigezi.

Lastly, the quality of population has changed for the better, though here the change is slower and less spectacular. Consequences of improved general health are the increased expectation of life, the decrease in rates for infant and maternal mortality and the increase in efficiency and output particularly of indigenous Protectorate labour. As indicated in the previous chapters the factors affecting these changes have been numerous and their interactions complicated.

Rainfall and consequent water supply appear to exert a strong influence on population location and change. Where these are allied to accessibility, as in the fertile Lake Victoria crescent populations have increased. The importance of the location factor is stressed; on the one

hand by the stagnation apparent in Bunyoro, cut off from the main line of communications and thus receiving little Government assistance, especially in the early years, and, on the other, by the growing importance of the Eastern Province, where production and population have both increased very considerably in the last half century.

These two factors of rainfall and of location dominate the patterning of population and by their importance dwarf the significance of tsetse fly infestation which itself is a direct reflection of lack of the close settlement permitted by adequate rainfall. Tsetse can be grouped with erractic and insufficient rainfall and also with a more difficult location to account for the present sparse populations of most of the short grass areas. Adequacy of rainfall, though certainly not accessibility has maintained high populations in the fringing highlands of the west.

Population change, in numbers, distribution and quality, between 1900 and 1950 has been affected by disease, itself frequently a function of tropical environment; by malnutrition, from carbohydrate diets most prevalent in non-cattle-owning areas; by type of life and settlement, dependent fundamentally on rainfall and water supply; by location and accessibility, favouring the southern and eastern areas, by economic dependence on

cotton, introduced and fostered by the Government and also by the traditional attraction of the northern shores of Lake Victoria to immigrants from beyond the borders of the Protectorate. To all these must be added the tribal characteristics of the various people, the hard, virile Nilotics, the smaller, softer living Bantu, such as the Baganda, who have a history of political ascendancy and minds quick to appreciate and embrace the material benefits of Western civilisation, the experience of which has guided development.

No one of these factors by itself is responsible for any great degree of population change. The previous paragraphs have shown some of the main combinations, indicating the impossibility of explaining population distributions except by a careful analysis of all the major factors, many of which react on each other in addition to the effect they exert on population.

It remains to consider if density of population is, therefore, an index of land potential and further, if population is a direct response to the environment, are there determinable critical densities of population in the various regional emvironments, increase beyond which would result in over-population?

Taking the second question first: a critical density can be defined as the greatest density of population the land can support at a given stage of technique and a given standard of living: any increase results in over-population. It is not an ultimate figure with reference to the

environment but is an ephemeral one, relevant only to a particular period and liable to be altered as a result of either of the two variables. No definite figure of critical density can be accepted without these reservations in mind. This definition also means that a comparison between densities in two comparable environments has no validity unless the conditions of living and technique are themselves comparable. A useful comparison can be made of population densities in similar agricultural areas of Western Europe and North America and between those of comparable regions in East Africa, but to transfer the criteria of critical densities applicable to a European environment, even one devoted to subsistence living, to an African habitat, used for the same purpose, is to deny the significance of environmental development and man's struggle towards better standards of living.

Over-population must be equated with under-development of resources and the seeming over-population of areas of Kigezi and Bugishu in Uganda are defined as such because, under present methods, increased population is resulting in a loss of fertility and consequently of production with a gradual lowering of the standard of living by the reduction of quantity and quality of food supplies. But, as suggested above, this classification of regions of over-population is not an ultimate definition, any change in technique, (reduction of the standard of living is hardly possible in these primitive areas) improved methods of cultivation and soil conservation, the use of manures and fertilisers, the introduction of cash crops and the

acceptance of mixed farming would be sufficient to raise the critical density and invalidate the former estimate of over-population. In Chapter VI[i] it was suggested that new methods of land tenure and land utilisation must be accepted if East Africa is to develop her resources for the benefit of her increasing population. Densities of 714 per square mile have been recorded in Kigezi and over 600 per square mile in Bugishu; but it appears likely that these densities (both dependent on volcanic soils) could be maintained without danger of over-population though under present circumstances it is impossible to suggest any firm figure for future densities.

Despite the possible absolute increase in permissible densities of population in every part of the Protectorate, as a result of improvement in technique, it is certain that relatively the grouping of agricultural population will remain much the same as at present with higher densities in the hill regions and the elephant grass areas and lower ones in the short grass regions of the centre and north.

This suggests that population density can in fact be accepted as an index of land potential but it must be recognised that up to 1950, Uganda was largely a country of primary agricultural production which depended directly on the capacity of the environment as well as on the human policy of production. In future, more widespread

i. See Chapter VI. page.233.

mineral resources may be discovered and worked in areas now devoid of population; industrial enterprises may be established in regions of present extensive farming and the clearing of tsetse from large sections of the Protectorate will result in a redistribution of population in these areas. Only in circumstances of equal population pressure on all land areas of the country can a discussion of land potential be relevant.

In conclusion it is emphasised that the changes in land and population which have been affected in the last fifty years in Uganda are the result of the stimulating contact of cultures. Africa for long has been denied this stimulation as the desert region of the north, by virtue of its nature and extent, acted as a barrier to the spread of peoples and cultures from Eurasia. Continued isolation from the great centres of civilisation was thus linked with an environment characterised by variability of rainfall, unstable soils of low fertility, an abundance of rank vegetation and the prevalence of environmental disease.

The factors of isolation, poverty of environment and high incidence of disease were expressed in a population of poor quality, who gained a precarious subsistence from the land by the use of primitive techniques. Population numbers were restricted by the high incidence of starvation, killing disease and tribal conflicts and population distributions showed the influence of the exceptional

areas of better rainfall and more fertile soils.

Consideration of the rapid development of the country in the years 1900 - 1950, surveyed in this study, should not obscure, but rather should serve to emphasise, the essential poverty of much of the environment; only in the highland areas and in the elephant grass regions, where rainfall is adequate and reliable and soils are well structured has production increased greatly without real threat of soil exhaustion or interruption by periodic famines.

In the realm of population the present densities show the general influence of this essential environmental division of the country; the favoured areas of the highlands and the elephant grass regions have produced, maintained or attracted considerable densities of population while the marginal zones continue to support densities which are relatively much lighter. But in detail there exists no fine adjustment of population to the present capacity of the land.

An analysis of population change reveals that differential rates of regional development may explain the current position, for the distribution and density of population must depend on the abilities and desires of the people as well as on the capacity of the land.

APPENDIX I.

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A P P E N D I X II

POPULATION STATISTICS

All statistics refer to native population only

T A B L E I.

Estimated Population of Administered Districts of Uganda 1906.[1]

Buganda	656,000
Central Province	1,840,000
Unyoro	234,000
Toro	68,000
Ankole	250,000
Nile	191,000
Total	3,239,000

Estimated Death Rate = 30.1 per 1,000

Estimated Birth Rate = 18.9 per 1,000

1. Colonial Reports. Annual No. 558 Uganda 1906-1907.

TABLE II.

Uganda Protectorate
Estimates of Total Population
at Five Year Intervals. [i]

1913	2,889,561	
1918	3,357,080	
1923	3,119,645	
1928	3,241,543	
1933	3,604,135	
1938	3,725,798	
1943	3,901,440	
1948	4,917,555	Census Figures

i. See Colonial Office List 1914, Colonial Reports. Annual. Uganda 1918-1919, 1923 Uganda Protectorate Blue Book 1928, 1933, 1938, 1943, East African Population Census 1948.

T A B L E III.

Uganda Protectorate

Increase or Decrease of Births over Deaths 1913-1939.[i]

Year	Buganda	Busoga	Bunyoro	Ankole	Toro	Total Increment
1913	- 3,018	+ 3,122	- 492	+ 1,397	+ 2,759	+ 3,768
1914	- 1,888	+ 1,700	- 115	+ 1,573	+ 2,204	+ 3,474
1915	- 3,912	+ 2,406	+ 38	+ 143	+ 2,265	+ 940
1916	- 3,065	+ 4,322	- 517	+ 798	+ 1,864	+ 3,402
1917	+ 4,385	+ 2,240	-1,466	+ 857	+ 1,583	- 1,171
1918	- 3,873	+ 1,553	-2,851	+ 776	+ 1,657	- 2,738
1919	- 5,709	- 3,135	-2,061	- 1,870	- 176	- 12,951
1920	- 2,204	+ 2,025	-1,012	+ 496	+ 907	+ 212
1921	- 711	- 1,483	- 997	+ 889	+ 1,896	- 406
1922	- 1,458	+ 2,953	- 891	+ 1,503	+ 1,872	+ 3,979
1923	- 624	+ 2,194	- 856	+ 1,611	+ 1,670	+ 3,995
1924	+ 37	+ 3,295	- 970	+ 2,329	+ 2,924	+ 7,615
1925	+ 1,059	+ 5,726	- 818	+ 3,727	+ 3,253	+ 12,947
1926	+ 1,179	+ 5,314	- 500	+ 2,891	+ 3,602	+ 12,486
1927	+ 3,475	+ 5,703	- 443	+ 4,446	+ 3,955	+ 17,136
1928	+ 1,091	+ 4,656	- 492	+ 4,848	+ 3,686	+ 13,789
1929	+ 1,357	+ 5,572	- 329	+ 4,238	+ 3,505	+ 14,343
1930	- 940	+ 3,799	- 801	+ 3,139	+ 1,571	+ 6,768
1931	+ 213	+ 3,084	- 406	+ 2,945	+ 497	+ 6,333
1932	+ 357	+ 3,322	- 246	+ 1,556	+ 743	+ 5,732
1933	+ 1,474	+ 4,184	- 24	+ 1,167	+ 962	+ 7,763
1934	+ 2,769	+ 1,536	- 179	+ 858	+ 1,143	+ 6,127
1935	+ 3,001	+ 813	+ 343	+ 494	+ 640	+ 5,291
1936	+ 3,828	- 997	+ 531	+ 3,682	+ 218	+ 7,262
1937	+ 4,069	- 1,830	+ 162	+ 2,373	+ 438	+ 5,212
1938	+ 6,204	+ 70	+ 604	+ 3,110	+ 1,200	+ 11,188
1939	+ 6,250	+ 1,499	+ 616	+ 3,141	+ 2,308	+ 13,814

i. Calculated from Medical Department Returns.

TABLE IV.

Uganda Protectorate (excluding Karamoja) Births and Deaths.[i]

Population (millions)	Year	Births		Deaths	
		Nos. (Annual)	Rate per 1,000	Nos. (Annual)	Rate per 1,000
3.53	1930/1934	97,500	27.6	70,800	20.1
3.75	1935/1939	99,900	26.6	66,900	17.8
4.14	1940/1944	108,700	26.3	77,200	18.7
4.41	1945	118,100	26.8	78,800	17.7
4.55	1946	116,400	25.6	79,800	17.6
4.70	1947	120,300	25.6	70,400	15,0
4.83	1948	123,800	25.6	67,800	14.0
4.98	1949	122,000	24.5	61,000	12.3

i. Calculations from figures in Medical Department Reports.

T A B L E V.

Uganda Protectorate
(excluding Karamoja)
Infant and Maternal Mortality Rates.[i]

Year	Infant Mortality per 1,000 live births	Maternal Mortality per 1,000 live births and still births
1926/1929	253	----
1930/1934	191	13.5
1935/1939	152	10.6
1940/1944	126	7.1
1945	110	5.7
1946	120	6.0
1947	99	5.3
1948	95	4.7
1949	69	5.1

i. Calculations based on figures given in Medical Department Reports

Available figures affect reported births and deaths only

TABLE VI.

Uganda Protectorate
Population by Districts[i]

District	1911 Population.	1911 Density per sq. ml.	1931 Population.	1931 Density per sq. ml.	1948 Population.	1948 Density per sq. ml.
Mengo	437,983	43.4	356,781	61.7)	899,596	86
Entebbe	47,934	8.2	185,219	93.5)		
Masaka	124,949	32.1	175,404	42.	317,688	77
Mubende	85,822	35.2	155,342	28.5	84,878	32
Busoga	246,000	24.2	378,394	102.	505,998	136
Bukedi (Mbale)	345,992	98.6	501,471	150.	599,950	180
Teso	268,056	63.1	270,211	69.6	402,565	87
Lango	250,141	44.	216,627	42.5	265,890	57
Karamoja	50,000	5.	65,578	6.1	125,567	11
Ankole	266,700	43.4	279,354	44.9	400,924	65
Toro	115,041	20.3	193,714	37.2	258,875	50
Kigezi	100,000	51.2	226,080	114.5	395,529[iii]	201
Bunyoro	130,922	25.	114,220	23.8	108,380[iii]	22
Gulu	68,000	9.5	96,553	14.7)	215,655	19
Chua	94,400	10.9	78,974	11.6)		
West Nile	45,800	10.	242,345	59.8	298,307	57
Protectorate Total	2,677,740[ii]		3,536,267		4,917,555	61

i. Census Reports 1911, 1931 and 1948.
ii. Nimule and Gondokoro excuded from 1911 figures.
Areas handed over to Sudan 31 December 1913.
iii. Estimated Population.

T A B L E VII.

Uganda Protectorate

Percentage Increase of Population by Districts.[i]

District	1911 - 1931	1931 - 1948
Mengo) Entebbe)	11	66
Masaka	40	81
Mubende	81	Decrease
Busoga	54	33
Bukedi (Mbale)	45	19
Teso	.8	49
Lango	Decrease	22
Karamoja	31	89
Ankole	4	43
Toro	68	34
Kigezi	126	75
Bunyoro	Decrease	Decrease
Gulu) Chua)	8	22
West Nile	*	23

* 1911 figures so unreliable that calculation impossible

i. Figures from Census Reports. See Table VI.

T A B L E VIII. A.

Uganda Protectorate
Province of Buganda
District of Masaka

Population by Counties[i]

County	Calculated area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Buddu	2,025	141,454	56.3	265,336	131	96
Mawagola	977.5	3,052	10	18,468[ii]	18.9	92
Kabula	330	7,430	25.5	9,520	29	28
Koki	662.5	17,268	26	19,408	29.3	12
Sesse	132.5	4,813	25.3	4,356	22.6	Decrease

i. Population Figures from 1931 and 1948 Census Reports
ii. Adjustment of county boundaries allowed for in calculations

T A B L E VIII. B.

Uganda Protectorate
Province of Buganda
District of Mengo

Population by Counties[i]

County	Calculated area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Buruli	1,362.5	20,419	14.9	17,997	13.2	Decrease
Bulemezi	2,230	111,227	49.8	157,992	71.3	42
Singo	2,875	69,613	24.2	101,712	35.3	46
Kyadondo	595	93,722	157.5	132,619	202.9	41
Kyagwe	1,300	114,621	88.2	208,362	160.3	81
Busiro	585	72,645	124.2	102,450	175.1	41
Busuju	165	7,977	48.3	17,378	105.4	117
Gomba	690	23,603	34.2	34,603	50.1	46
Butambala	190	24,205	127.4	28,984	152.5	19
Mawokota	425	55,667	130.9	69,457	163.4	24
Bugerere	720	10,333	14.3	20,911	29	102
Buvuma	150	3,774	25.1	2,354	15.7	Decrease

i. Population Figures from 1931 and 1948 Census Reports

T A B L E VIII. C.

Uganda Protectorate
Province of Buganda
District of Mubende

Population by Counties[i]

County	Calculated area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Buyaga	1,025	35,300	34.4	34,077	33.2	Decrease
Bugangazzi	675	24,330	36	21,551	31.9	Decrease
Buwekula	1,062.5	25,537	24	29,166	27.4	14

i. Population Figures from 1931 and 1948 Census Reports

T A B L E IX. A.

Uganda Protectorate
Eastern Province
District of Busoga

Population by Counties[1]

County	Calculated area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Bugabula	1,075	127,880	103.5	148,663	136.9	33
Bulamogi	362.5	46,690	128.9	48,790	134.8	4
Luuka	285	22,374	50.8	44,833	157.3	154
Kigulu	230)	114,416	206.1	61,476	267.2)	9
Busiki	325)			63,776	196.2)	
Bugweri	320	19,662	61.4	35,854	112	82
Bukoli	595	24,450	41	35,180	59.1	44
Butembe-Bunya	672.5	21,903	60.3	66,214	98.5	48

1. Population Figures from 1931 and 1948 Census Reports

TABLE IX. B.

Uganda Protectorate
Eastern Province
District of Mbale

Population by Counties[i]

County	Calculated area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Pallisa	350	58,676	167.6	70,264	200.8	19
Budaka	360	47,636	132.3	69,591	193.3	46
Sebei North	720)	71,969	62.8	31,381	43.6)	14
Bugishu	425)			82,233	195.8)	
Central Bugishu	192.5	33,892	176.5	60,126	313.2	124
South Bugishu	347.5	93,399	268.9	87,707	252.8	25
Bunyole	262.5	37,691	143.8	45,712	174.4	21
West Budama	312.5)	81,703	167.7	61,114	195.8)	26
East Budama	175)			42,378	245.0)	
Samia	300	28,259	94.2	43,821	146.1	55

i. Population Figures from 1931 and 1948 Census Reports

TABLE IX. C.

Uganda Protectorate
Eastern Province
District of Teso

Population by Counties[i]

County	Calculated area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Amuria	1,050	40,767	38.8	53,622	51.1	31
Kabera-maido	512.5	23,974	46.8	45,789	89.4	95
Soroti	582.5	41,576	71.4	55,206	94.8	32
Usuku	937.5	24,177	25.8	47,980	51.2	98
Serere	487.5	27,868	57.2	50,535	104.2	81
Kumi	415	53,597	87.1	99,919	162.4	86
Bukedea	422.5	47,303	112	49,115	116.4	4

i. Population Figures from 1931 and 1948 Census Reports

TABLE X. A.

Uganda Protectorate
Western Province
District of Ankole

Population by Counties[i]

County	1931 Calcltd. area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Calcltd. area of Land and Swamp sq. mls.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Mitoma	560	21,377	38.1	675	26,484	39.2	4
Nshara	547.5	8,643	15.8				
Bukanga	440	6,580	14.9				
Ishingiro	635	7,050	11.1	1,055	19,251	18.2	38
Kasharí) Nyabushozi)	1,335.5	32,794	24.5	425	29,809	70.1	14
				1,525	17,686	11.5	
Buhweju	525	13,814	26.5	375	21,584	57.2	
Buzumba	130	11,228	86.3				
Ruampara	725	46,458	69	725	78,604	108.4	69
Kajara	400	42,470	106.2	400	67,309	168.2	58
Igara	430	46,659	108.5	430	68,133	158.4	46
Shema	362.5	35,105	100	362.5	61,462	169.2	75
Bunyaruguru	412.5	6,776	16.4	412.5	10,372	25.2	53

i. Population Figures from 1931 and 1948 Census Reports
Allowance has been made for the extensive boundary changes

T A B L E X. B.

Uganda Protectorate
Western Province
District of Bunyoro

Population by Counties[i]

County	Calculated area Land and Swamp sq. miles	1931 Population	Density per sq. mile
Buhaguzi	1,310	30,596	23.3
Buruli	715	16,480	23
Kihukya	375	13,977	33.1
Bujenje	762.5	19,922	26.1
Kibanda	597.5	6,248	10.5
Bugahya	442.5	26,670	60,3

i. Population Figures from 1931 Census Report
No county returns are available for 1948

TABLE X. C.

Uganda Protectorate
Western Province
District of Kigezi

Population by Counties[i]

County	Calculated area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Rukiga	310	54,506	175.8	74,498	240.3	36
Bufumbira	298	44,136	148.1	79,694	267.4	80
Ruzhumbura	425	30,611	72	52,045	122.4	70
Ndorwa	447.5	78,601	175.8	152,783	341.7	94
Kinkizi	572.5	18,038	31.5	36,261	63.4	101

i. Population Figures from 1931 and 1948 Census Reports

T A B L E X. D.

Uganda Protectorate
Western Province.
District of Toro

Population by Counties[i]

County	1931 Calcltd. area of Land and Swamp sq. mls.	1931 Population.	1931 Density per sq. ml.	1948 Calcltd. area of Land and Swamp sq. mls.	1948 Population.	1948 Density per sq. ml.	Percentage Increase 1931-1948
Mwenge	950	37,886	39.8	950	49,895	52.5	31
Kyaka	332.5	8,986	27	670	17,488	26.1	
Bunyan-gabu	552.5	20,418	37	552.5	35,872	65	75
Kibale	645	13,193	20.4	862.5	10,557	12.2	
Burahya	722.5	40,081	55.5	722.5	12,556	72.9	31
Buson-gora	855	29,122	34	855	47,084	55.1	61
Bwamba	677.5	24,883	36.7	677.5	45,108	66.6	81
Kitag-weta	457.5	10,877	23.8				
Nyaka-bima	115	7,231	62.9				

i. Population Figures from 1931 and 1948 Census Reports
Calculations are based on changed administrative boundaries

T A B L E XI. A.

Uganda Protectorate
Northern Province
District of Acholi

Population by Counties[i]

County	Calculated area Land and Swamp sq. miles	1948 Population	1948 Density per sq. mile
Kilak	3,125	41,956	13.4
Lamwo	2,160	29,185	13.5
Chua	2,175	37,618	17.3
Aswa	965	36,162	37.4
Agago	1,770	28,920	16.3
Omoro	1,595	41,681	26.1

i. Population Figures from 1948 Census Report
No areas are available for calculations of 1931 figures

T A B L E XI. B.

Uganda Protectorate
Northern Province
District of Lango

Population by Counties[i]

County	Calculated area Land and Swamp sq. miles	1948 Population	1948 Density per sq. mile
Erute	435	69,674	160.1
Moroto	1,075	54,793	50.9
Oyam	1,025	51,531	50.1
Maruzi	695	18,889	27.2
Kwania	527.5	19,951	38
Kioga	380	22,371	58.8
Dokolo	480	28,480	59.3

i. Population Figures from 1948 Census Report
No areas are available for calculations of 1931 figures

T A B L E XI. C.

Uganda Protectorate
Northern Province
District of West Nile

Population by Counties[i]

County	Calculated area Land and Swamp sq. miles	1948 Population	1948 Density per sq. mile
Okoro	775	68,089	87.8
Maracha	190	38,487	202.5
Jonam	405	27,388	47.9
Aringa	870	32,234	37
Terego	415	31,812	76.6
Koboko	317.5	16,856	53.1
Vurra	375	23,268	62
Ayivu and Arua	160	38,214	288.5
Madi	662.5	21,836	33
West Madi	805	18,934	23.5
East Madi	1,015	18,806	12.6

i. Population Figures from 1948 Census Report
No areas are available for calculations of 1931 figures

T A B L E XII.

Uganda Protectorate

Main Tribes 1931[i] - 1948[ii]

Tribe	1931 Male	1931 Female	1931 Total	1931 % Total Protectorate	1948 Male	1948 Female	1948 Total	1948 % Total Protectorate
Baganda	367,401	417,492	784,893	22.2	411,284	424,807	836,091	17.0
Iteso	183,182	204,119	387,301	10.9	224,692	237,972	462,664	9.4
Basoga	167,868	184,408	352,276	9.9	208,768	217,840	426,608	8.7
Banyankole	98,048	126,388	224,436	6.3	186,416	201,113	387,529	7.9
Banyaruanda	45,350	31,391	76,741	2.1	166,711	122,340	289,051	5.9
Bakiga	64,995	75,897	140,892	3.9	127,779	143,959	271,738	5.5
Lango	86,803	89,457	176,260	5.0	131,443	133,853	265,296	5.4
Bagishu	83,664	90,854	174,518	4.9	119,894	123,848	243,742	5.0
Acholi	67,004	70,571	137,575	3.8	103,237	105,924	209,161	4.2
Lugbara	63,923	75,325	139,248	3.9	89,847	93,264	183,111	3.7
Banyoro	59,519	63,754	123,273	3.5	87,977	92,633	180,610	3.7
Batoro	78,871	88,386	167,257	4.7	78,708	83,951	162,659	3.3
Karamojong	30,836	32,986	63,822	1.8	52,196	56,086	108,282	2.2
Bagwere	38,362	40,788	79,150	2.2	40,705	42,518	83,223	1.7
Alur	39,392	41,149	80,541	2.2	41,898	38,799	80,697	1.6
	Percentage of Protectorate Total =			87.3	Percentage of Protectorate Total =			85.2

i. Census Report 1931 p.57

ii. Census Report 1948 p.4